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This dental health guide, prepared by the Missouri State Department of Education in cooperation with the State Dental Association and the Division of Health, attempts to develop understandings, habits, and attitudes regarding dental health through a correlated program of instruction for all grade levels. Specific objectives of the program are to teach: (1) care of the teeth, (2) proper dental nutrition, (3) the role of the family dentist, (4) the importance of dental care to appearance and general health, (5) functions of the teeth, (6) problems of dental decay, (7) personal responsibility for individual dental health, and (8) job-opportunities in the field of dental health. Guides are included for primary, intermediate, and junior and senior high levels, which include suggestions to teachers for classroom discussions and activities. A section is devoted to background material with which the teacher should be acquainted to enable her to answer questions which will come up in class. Instructional outlines plus suggestions for related class activities and resource materials are listed. Sample dental forms are included which concern communication with parents on necessary dental care for their children. (Author/CJ)

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A Guide for Dental Health Education

MISSOURI

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

N-SG

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A Guide for Dental Health Education

Kindergarten through Grade Twelve

Publication No. 121-G
1968 Revision

Hubert Wheeler

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A Guide for Dental Health Education

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FOREWORD

The youth of our state should understand the importance of oral health. Dental decay is said to be the most common disease of the mouth. Research in this area reveals that the occurrence of dental caries ranges from one or more at the age of two years, seven or more at the age of sixteen, and twenty at the age of forty. It is evident that there must be a real concern and positive action by educators and dentists alike if the youth of Missouri are to become informed regarding the importance of attaining and preserving proper oral habits.

School administrators and teachers are urged to acquaint themselves with the objectives of dental health education and to give serious consideration to implementing the program as described in this guide. The overall objective is to develop understandings, habits and attitudes regarding dental health through a correlated program of instruction for all grade levels. The support of all concerned is solicited for a more effective preventive and treatment program. The educational program is intended to be child-centered but this does not exclude parent education. The correction phase of the program should be parent-centered insofar as possible.

We gratefully acknowledge the splendid cooperation of the Missouri State Dental Association, the Missouri Division of Health and the classroom teachers who gave freely of their knowledge and time in aiding the personnel of the State Department of Education in the development of this guide. The plan for instruction appears to represent the best thinking in dental health education today.

Hubert Wheeler

Commissioner of Education

Chapter One

POINT OF VIEW

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Point of View

A Statewide committee of dentists, classroom teachers, Division of Health and Department of Education personnel was selected to develop a Dental Health Education Guide. The roster of the committee listed on page V reveals that all levels of education and dentists from the component societies of the Missouri State Dental Association were represented.

What Are The Basic Assumptions?

It is assumed:

1. That all procedures in this guide are presented in keeping with sound educational principles.
2. That all Boards of Education, through their administrative officer consider the implementation of the program as a part of the school program as described in assumption number five.
3. That upon request the local dentists will cooperate with the local school administrators in implementation of this guide.
4. That this guide will be used in planning dental health education from kindergarten through grade twelve.
5. That the committee responsible for planning this guide in no way intended that dental health education be taught as an individual program. Rather, it should be considered as an integral part of the total school program, and correlated with existing subjects such as health, science, social studies and homemaking.
6. That this guide will be distributed to schools in the state in accordance with their particular needs.

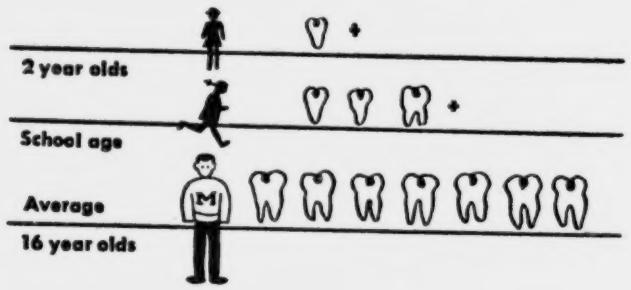
Why Is Dental Health Important?

Dental or oral health is important because the mouth acts as the gateway to the body. This fact in itself is enough to cause us to be extremely concerned, not only in preventing diseases of the mouth, but in correcting or treating conditions that tend to interfere with its normal functions, cleanliness, and appearance.

The interrelationship of oral and general health has been long established. This points out the necessity of using our every effort to attain and maintain this optimum condition of health to the various structures which make up the mouth and are contained within it. This condition of oral health deals not only with the teeth, but with gingival tissues (gums) and the alveolar process (bone) which support the teeth.

Studies conducted over the years indicate that over 95 per cent of the people in the United States suffer from dental caries (dental decay). Approximately 90 per cent of all school age children are in need of dental care. The incidence of dental caries is annually increasing approximately six times faster than it is being corrected.

Fifty per cent of all two-year-old children have one or more decayed teeth. By the time these children reach school age they have four or more decayed primary (deciduous) teeth. By 16 years of age the average youth has seven or more decayed, missing, or filled permanent (second) teeth involving two surfaces. By age forty, the average person has over 20 decayed, missing, and filled teeth with perhaps 12 of these having been extracted. By these figures it is evident that there must be real concern and adequate action taken to attain and preserve our oral health.



What Are The General Objectives Of A School Dental Health Program?

Dental health is known to affect the general health, the appearance and social adjustment of an individual throughout his lifetime. The control of dental disease and defects and the establishment of good oral hygiene habits are best accomplished during childhood.

The American Dental Association has adopted a statement of objectives of a community dental health program that might be paraphrased to apply to a school dental health program. These objectives so paraphrased are:

1. To help every school child appreciate the importance of a healthy mouth.
2. To help every school child appreciate the relationship of dental health to general health and appearance.
3. To help all parents become aware of their children's dental defects and the possible consequences of their remaining untreated.
4. To encourage the observance of dental health practices, including personal care, professional care, proper diet and oral habits.
5. To enlist the aid of all groups and agencies interested in the promotion of school health.
6. To correlate dental health activities with the total school health program.
7. To stimulate the development of resources for making dental care available to all children and youth.
8. To stimulate all dentists to be active in their community regarding dental health education.

What Are The Specific Objectives?

Primary Grades

The overall objective is to develop understanding, habits, attitudes and skills promoting good dental health by teaching:

1. How, when and why to care for the teeth;
2. Which foods help to achieve and maintain better dental health;
3. Understanding and appreciation of the role of the family dentist.

Intermediate Grades

By teaching:

1. Relationship of good dental health to appearance
   a. Orthodontic care
   b. Regular cleaning
   c. Preventive orthodontic care

2. Relationship of dental health to general health
   a. Decayed teeth—poor mastication
   b. Decayed teeth—gum disorders
   c. Decayed teeth—bad breath
   d. Dental health and specific diseases (gingivitis, Vincent's infection)
   e. Decayed teeth—oral infections

3. Understanding of the process of chewing and the functions of different types of teeth. Biting, tearing, grinding teeth

4. Understanding of dental decay
   a. Prevalence
   b. Cause
   c. Progress
   d. Control

5. Understanding of the relationship between dental health and nutrition
6. Understanding of the function of a dentist in the overall educational program

Junior and Senior High Level

The general objectives at this level are stated in concept form as follows:

1. Knowledge is basic to health habits.
2. Dental disease can be prevented.
3. Dental health can be maintained.
4. Dental health is a basis for social well being.
5. Dental health is the responsibility of the individual.
6. Dental health of the community is the responsibility of local and state agencies.
7. The field of dental health offers many opportunities for life-time occupation.

What Is The Relation Of Dental Health To Health Education?

The dental health education program should not be an entity in itself, but should be considered a part of the total health education program. The ultimate aim of a dental health program is to assist the student in understanding and appreciating the basic principles of good dental health and its relationship to good general health and appearance.

It is, therefore, necessary that a coordinate effort be made by health departments, educational institutions, and dental associations to provide authentic dental information. This is essential to combat misinformation that has been handed down from one generation to the other concerning oral hygiene.

One of the greatest needs in the development of proper health practices of the school child, which forms the foundation of lifetime habits, is health education. It should include: (1) the development of personal habits and attitudes which are conducive to satisfactory individual health, and (2) the development of personal habits which affect personal relationship with others.

What Is The Relationship Of Nutrition And Dental Health?

Good nutrition is essential for the growth, development, maintenance, and repair of all body cells. Our daily food should provide us with all the nutrients necessary for good health, including good dental health. The Daily Food Guide is a pattern to use in helping us select a well-balanced diet which will provide all the essential nutrients. This Guide is a revision of the Basic Seven, into four instead of seven food groups. While either pattern is equally good, many educators are finding the Guide a simpler pattern to use.

Daily Food Guide

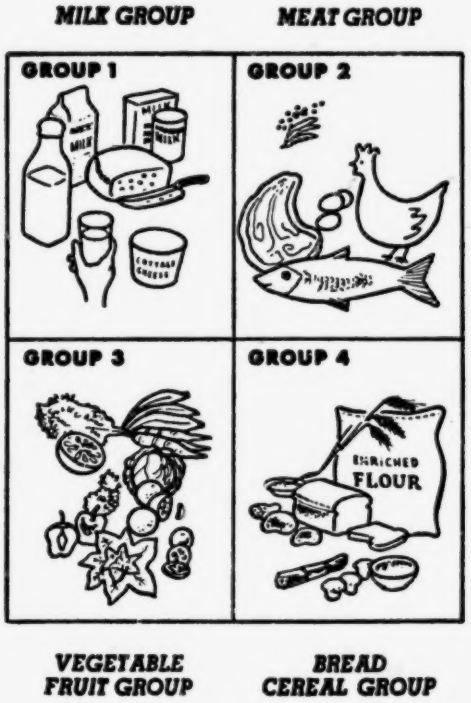
1. Three to four cups of milk or milk equivalents
2. Four or more servings of vegetables and fruit. Include a citrus fruit or other fruit or vegetable important for vitamin C, a dark-green or deep-yellow vegetable for vitamin A, other vegetables and fruits, including potatoes at least every other day.
3. Two or more servings of meat, fish, poultry, eggs, or meat alternates (dry beans, dry peas, nuts)
4. Four or more servings of whole grain, enriched, or restored breads and cereals

(Vitamin D is recommended for children up to 20 years of age by the Food and Nutrition Board of the National Research Council. The amount used should be upon the advice of the physician or dentist.)

FOOD FOR FITNESS

A Daily Food Guide

Basic Four



During the development of the tooth structures, which begins about the sixth week of pregnancy and continues until the child is about eight years of age, all the cells of the tooth-forming tissue must be supplied with many essential nutrients by the blood stream. After the enamel is formed, good nutrition is important for the maintenance of good bone structure, healthy gums, and general good health.

Fibrous foods are those which require thorough chewing and assist in cleansing the teeth. They also help exercise the muscles used for chewing. Examples of fibrous foods are fruits, such as apples, oranges; and raw vegetables, such as celery and carrots.

Sticky, high-carbohydrate foods that are cleared slowly from the oral cavity should not be excessively consumed. These foods, such as candies, sweetened beverages, jams, jellies, pastries, and starchy foods, produce the most acid in the mouth and provide a minimum of nutrients. Between-meal snacks and party refreshments can be planned to include more protective foods, such as fresh fruits, raw vegetables, fruit juices and milk.

All foods containing sucrose are especially harmful to the teeth since this food is rapidly converted to organic acids by mouth bacteria.

Sugar Chart

The annual per capita consumption of sugar in the United States is over 100 pounds. This amounts to about fifteen per cent of the total food calories consumed, and is not considered a requirement for a healthy child. Sweets supply energy only for current body activity or for storage, and contribute few or none of the specific substances required for good nutrition. Common concentrated sweets used to excess are harmful, especially for children, insofar as they impair the appetite for other highly necessary foods. Sweets are also inducive to dental caries. The following list of common foodstuffs and their sugar contents, added or natural, illustrates the amount of sugar from these sources.

ITEM	PORTION	APPROXIMATE SUGAR IN TEASPOONFUL
Chewing gum	1 stick	1/2 tsp. sugar
Lifesaver or Mint	1	1/3
Marshmallow	1	1–1/2
Average Chocolate Milk Bar	61 grams (5c size)	7
Fudge	1 oz. square	4–1/2
Soft Drinks or Pop	6 oz.	3–1/3 to 4–1/2
Soft Drinks	8-10 oz.	4–1/2 to 5
Jams & Jellies	1 tablespoon	4 to 6
Honey & Syrups	1 tablespoon	3 to 5
Chocolate Icing or Sauces	1 tablespoon	3–1/2 to 5
Cookies		
Brownies	1	3
Fig Newton	1	5
Macaroon	1	6
Doughnut (glazed)	1	6
Cakes		
Angel Food	1 (4 oz. piece)	7
Chocolate—2 layer—icing	1/12 of cake	15
Applesauce	1 average slice	5–1/2
Coffee	1 average slice	4–1/2
Pies		
Fruit	1 average slice	7-10
Cherry	1 average slice	10–13
Custard type	1 average slice	10
Dairy Products		
Ice Cream Cone	1	3–1/2
Ice Cream	1/3 pt. (3-1/2 oz.)	3–1/2
Ice Cream Sundae	1	7–10
Ice Cream Soda	1	5
Chocolate Milk	1 cup (5 oz.)	6

1 cupful equals 200 grams (7 ounces) equals 800 calories
1 cupful equals 16 tablespoonfuls or 48 teaspoonfuls
1 teaspoonful equals 16-1/2 calories

What Are the Three Phases of A Good Dental Health Program?

A good dental health program will consist of education, prevention and treatment. Since education is paramount to prevention and treatment, it should be considered first.

Education should be centered on the parent and child. This is necessary for the recognition and the correction of oral habits, toothbrushing techniques, diet instructions, the importance of keeping appointments and proper appreciation of early operative care.

Prevention is concerned with regular oral inspections, adequate diagnosis and the institution of preventive measures. Dental inspection may be conducted in the school, hospital or dental office and is a part of a complete physical examination. Diagnosis of disease will necessitate X-rays and laboratory aids. Preventive measures include periodic prophylaxis, topical fluoride therapy, institution of restricted carbohydrate diets and early remedial care.

Treatment involves the recognition of hard and soft tissue diseases and conditions, and their proper correction or control. This includes the filling of cavities, replacement of lost teeth, and treatment of infected pulps and tissues.

How Should This Guide Be Used?

Since dental health is highly correlative as a subject, this guide can be used most effectively:

1. If it is placed in the hands of the teachers responsible for teaching the elementary child in all grades and departmental teachers of health, science, social studies, homemaking, and health-physical education.
2. If the school administrator will encourage and help teachers concerned in implementing this program as an integral part of the curriculum.

In making use of this guide, the teacher should:

1. Review the objectives of the program often.
2. Read the chapter entitled "Resource Information for Teachers." This chapter has been written by practicing dentists in lay language as resource information to acquaint the teacher with the basic knowledge required for implementing the teaching units developed in the instructional program.
3. Become acquainted with the teaching unit suggested for the grade level she is assigned.
4. Secure teaching materials such as textbooks, reference books, films, etc. as suggested in the guide for use by the pupils in the study of the units.

The teacher should not feel that she has fulfilled her responsibility by just teaching the suggested unit but rather come to recognize the many other opportunities where dental health instruction may be correlated with other topics and subjects throughout the school year.

The school administrator should feel free to call on the local dentists for help in implementing and maintaining an adequate program in dental health education. As an organization they have indicated their willingness to give all the assistance possible.

Chapter Two

RESOURCE INFORMATION FOR THE TEACHER

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Resource Information for the Teacher

What Are Basic Facts Concerning Structure and Function of Teeth?

A. Growth and Development of the Teeth

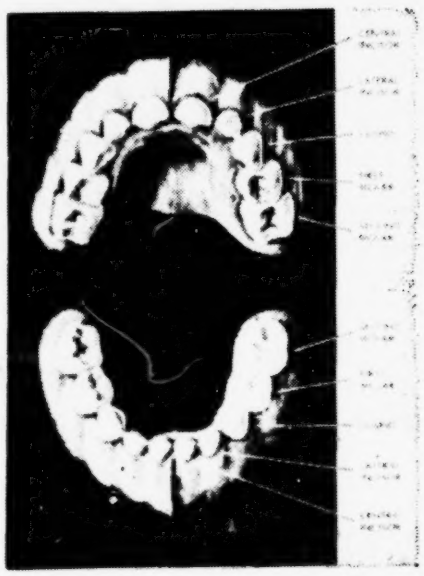
The deciduous or primary teeth begin their formation by the sixth week of foetal life. It is also apparent that many other structures of the mouth such as the palate, cheek and tongue have attained recognizable outline at this age. The crowns of the primary teeth are shaped and begin to calcify by the fourth month of intra-uterine life. The last three months before birth is a period of crown completion and beginning root formation of the primary teeth. There is also a beginning formation of the first permanent molar prior to birth.

It is unusual for teeth to be in the mouth of the infant at birth or for them to erupt during the early weeks of life. However, this occasionally occurs, and these teeth must be removed by the dentist to facilitate feeding the infant. Abnormalities of the mouth, such as cleft lip, cleft palate, large tongue, small lower jaw and cysts are sometimes found in the newborn and usually require medical, surgical and dental care.

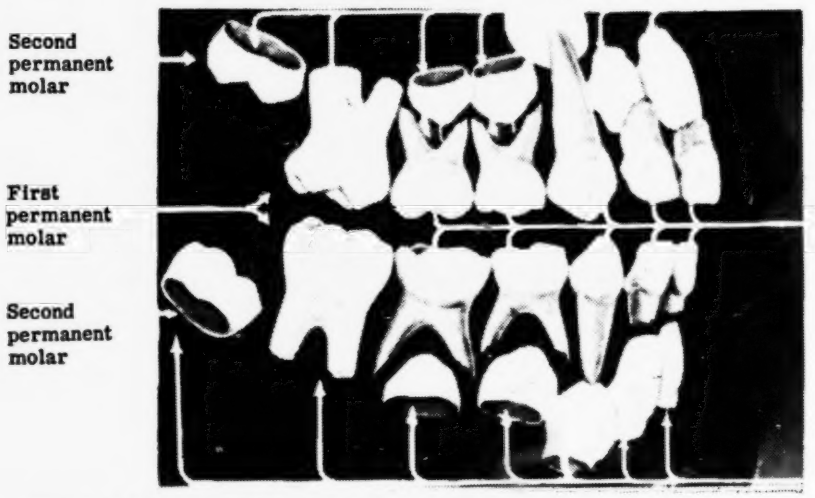
The first deciduous tooth usually erupts into the mouth between the fifth and seventh month of life. The first teeth appear in the front of the mouth and may be seen in the upper or lower jaw or both jaws at the same time. The remaining primary teeth erupt in sequence following the eruption of the central incisors. The sequence of eruption is: central incisor, lateral incisor, first deciduous molar, cuspid and second deciduous molar. All teeth tend to erupt earlier in girls and in slender children.

B. Structures of Primary Teeth

In keeping with the smaller jaws in a child, the primary teeth are also smaller than the permanent teeth. The primary teeth are composed of a crown (visible portion of tooth), root and dental pulp. The crown is covered with enamel (hardest tissue in the body) and dentin (bone-like), but is about half as thick in primary teeth as compared to permanent teeth. The roots are covered with cementum (bone) and dentin. The tooth is held in its bony socket by the periodontal membrane. The dental pulp occupies the inner portion of the crown and the middle part of each root. Most of the front teeth have only one root, while most of the back teeth have two or more roots. The thinness of the primary tooth enamel makes for much more rapid decay of these teeth, once they are attacked, and permits the lesions to spread more easily. This is one of the reasons for early and periodic care by the dentist.



DENTITION OF SIX-YEAR-OLD CHILD



ERUPTION AND SHEDDING OF PRIMARY TEETH

upper	eruption	shedding
Central incisor	7 1/2 mo.	7 1/2 yr.
Lateral incisor	9 mo.	8 yr.
Cuspid	18 mo.	11 1/2 yr.
First molar	14 mo.	10 1/2 yr.
Second molar	24 mo.	10 1/2 yr.

lower		
Second molar	20 mo.	11 yr.
First molar	12 mo.	10 yr.
Cuspid	16 mo.	9 1/2 yr.
Lateral incisor	7 mo.	7 yr.
Central incisor	6 mo.	6 yr.

Note: Primary molars are not shed until the child is 10 to 11 years of age. If a primary molar is extracted prematurely, a dentist should determine the necessity of maintaining the space for the incoming permanent teeth.

The color of primary teeth is bluish white and much lighter in color than the corresponding permanent teeth. Since these teeth erupt from the tongue side of the mouth, most problems of irregular or unusual eruption should be dismissed as being normal for this age period. The deciduous teeth begin to absorb soon after they are completely formed. The normal shedding of teeth is a physiologic process and necessary for the eruption of the permanent teeth. The total number of 20 deciduous teeth should be attained by the time the child reaches 2½ to 3 years of age.

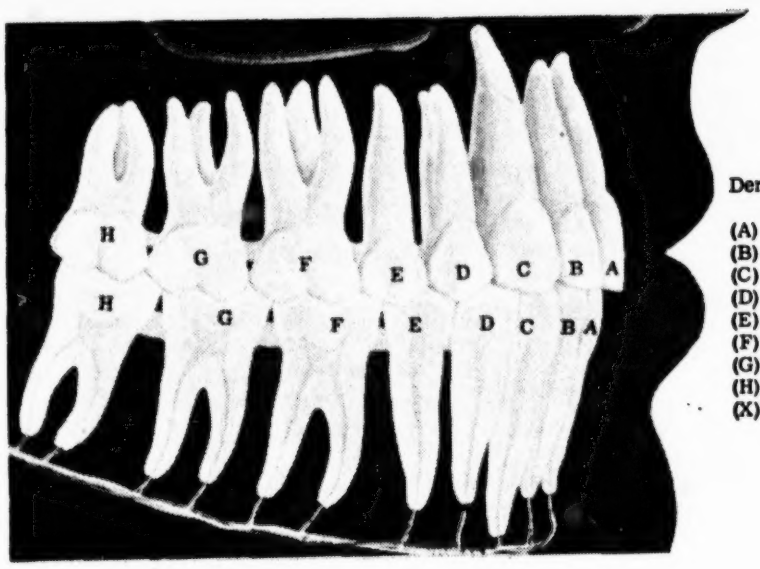
C. **Characteristics of the Primary Dentition**

The completed eruption of 10 primary teeth in both the upper and lower jaws will result in an oval shape to each arch. There is usually a generalized spacing of all erupted teeth with additional space in front of the upper cuspid and behind the lower cuspid. This spacing is normal to all primates. The teeth appear in the mouth in a vertical position and oppose each other in a perpendicular manner. The upper and lower incisor teeth should touch each other on their biting edges.

D. **Appearance of the Permanent Teeth**

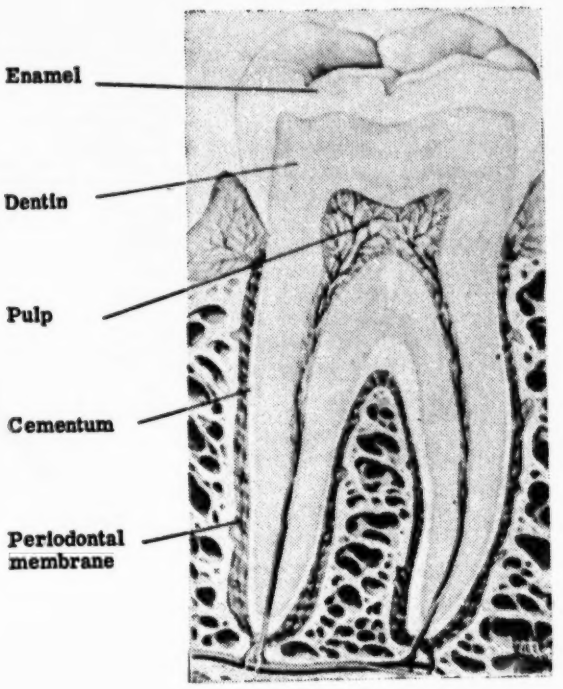
Between the fifth and seventh year, the first permanent molar (6 year molar) will appear in the child's mouth. The first, second and third molars do not replace primary teeth, but are in addition to these teeth. In the span of one year following the eruption of the first permanent molar, one or more of the central incisor teeth will be lost and replaced with their permanent counterparts. This period is called the mixed dentitional stage (ugly duckling stage), and ranges from five to 12 years of age. During this period, all of the deciduous teeth's roots will be absorbed, teeth will be lost and be replaced by permanent teeth. There is one difference in names of teeth being replaced. The primary first and second deciduous molars are replaced by the first and second bicuspids (premolars); otherwise, the names of teeth are the same.

The sequence of eruption for the permanent teeth differs considerably from that of the primary teeth. In the eruption of the permanent lower teeth, the first molar is first followed by the central incisor, lateral incisor, cuspid, first and second bicuspid (premolar) and second and third molar. The upper teeth follow the same sequence except that the cuspid erupts after the eruption of the first and second bicuspid and not before. Early visits to the dentist will permit him to guide the favorable eruption sequence of the permanent teeth and maintain a proper alignment of teeth. It must be pointed out here that the loss of deciduous teeth and especially molar teeth prior to their normal exfoliation time will cause the premature eruption of permanent teeth and thus may produce malocclusion. Dental caries (decay) is one of the most common causes for the premature loss of primary teeth. In children where this has occurred, it is advisable that they see their dentist so that artificial replacements (space maintainer) can be placed to insure adequate space for the eruption of the permanent teeth.



Dentition of an Adult

(A) Central incisors
(B) Lateral incisors
(C) Cuspids
(D) First bicuspids
(E) Second bicuspids
(F) First molars
(G) Second molars
(H) Third molars
(X) Artery, vein and nerve



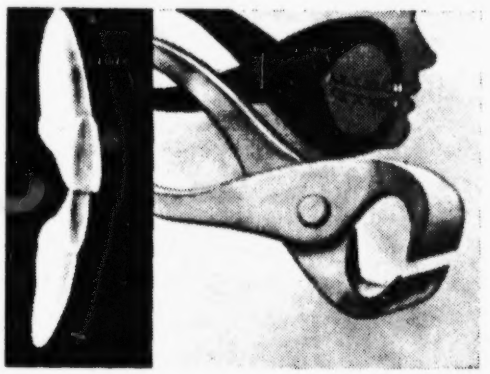
E. Function of the Teeth

Both primary and permanent teeth complete their formation and calcification after they have fully erupted into the mouth. Since enamel is an inert tissue, and cannot repair itself, any disease of enamel (dental caries) must be repaired by material replacements (fillings). The dentin, on the other hand, if destroyed by dental decay, can be repaired by new formations arising from the dental pulp. This is true only if the injury is not too severe or rapid in character. The cementum lining the root is fed by blood vessels and tissue fluid coming from the bone which carries the tooth.

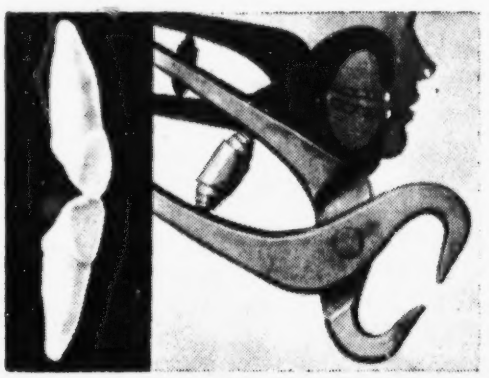
The eruption of the first primary teeth corresponds to the beginning of chewing in the infant (6 months). Later, stages of development of the infant finds the teeth useful in the formative stages of speech (9 to 10 months). The appearance of the molar teeth in the 16 to 20 month old child corresponds to the period when solid foods are being eaten and eating hibits are being formed.

It is, therefore, noted that the primary teeth are important in the developmental stages of the child for chewing, speech formation and masticating solid foods. The incisor teeth are for biting, the cuspids for tearing and the molars are for grinding foods. In addition, a full complement of teeth adds materially to the pleasing appearance of the child and to the total formation of the lower half of the face.

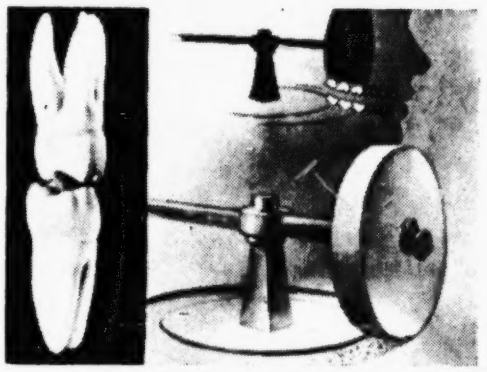
THE FUNCTIONS OF THE VARIOUS TYPES OF TEETH ARE AS FOLLOWS:



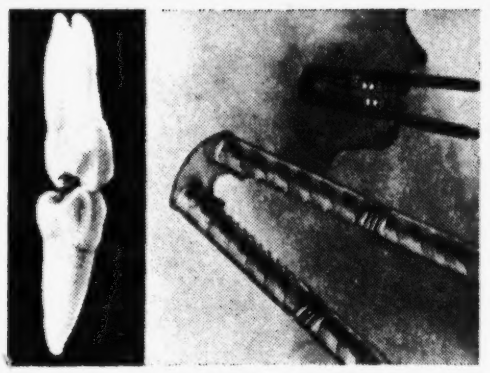
The incisors—located in the center front of the mouth—are used to cut or incise food.



The cuspids—located at the corners of the mouth—have a long heavy root and a sharp pointed crown. They are used to tear food.



The molars—located in the back of the mouth—have several cusps and two or three roots. They are used to grind food.



The bicuspids—located just back of the cuspids—have two cusps and one or two roots. They are used to tear and crush food.

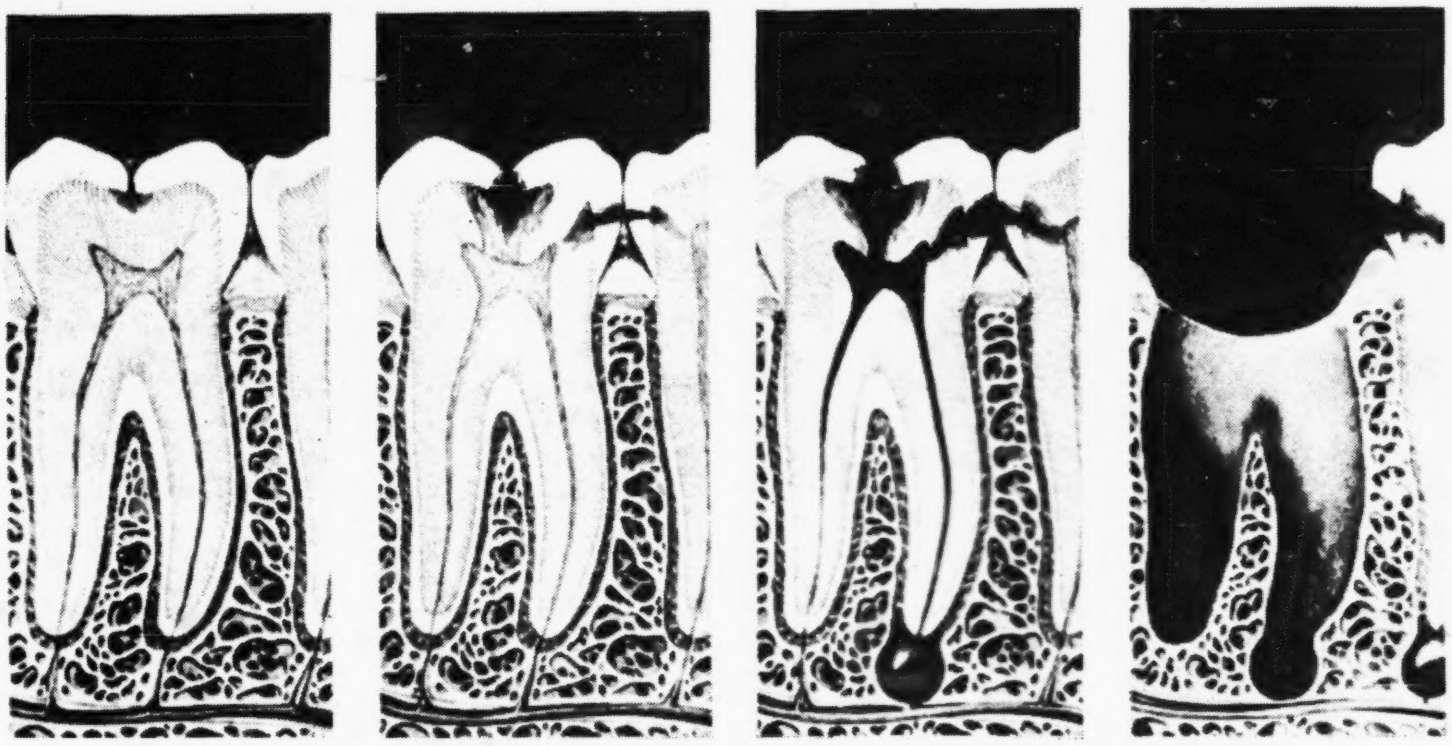
How Can Dental Diseases Be Prevented and Controlled?

The oral diseases and conditions most commonly encountered in school children are dental caries (dental decay), malocclusion (crooked teeth or bite), periodontal diseases (pyorrhea and gingivitis), and pernicious habits. Although all of these are separate problems, malocclusion and periodontal diseases are often the result of dental caries and inadequate diet.

DENTAL CARIES (dental decay) is a disease process that destroys tooth structure and produces cavities in the teeth. Dental caries is caused by the action of certain acidogenic (acid forming) bacteria on fermentable carbohydrates (sugars). The acid caused as a result of this action dissolves the enamel on the tooth surface, and if not stopped, the process continues into the dentin (second layer of tooth) and eventually reaches and infects the pulp (nerves and blood vessels). Decay always starts as a small hole on the outer surface of the tooth, usually in pits or fissures, but it may start on any area of the tooth where food particles pack or adhere.

This combination of bacteria, food particles, and part of the saliva form a gluey-like mass called the dental plaque. It is here under this plaque that decay starts. If the disease continues into the pulp it becomes infected and an abscess is formed. The abscess is usually very painful and may cause swelling of the gums and surrounding tissues. If left unattended it is possible for the abscess to affect other parts of the body. For this reason it is important that each child receive regular inspection and treatment as needed. Dental caries in children, although variable in its progress, is usually very rapid.

Newer knowledge and the introduction of better agents have made dental caries a fully preventable disease. This requires the combined use of several different procedures by the patient and routine regular care by the dentist. These preventive measures are: (1) reduction in the daily consumption of sweets, (2) brushing the teeth thoroughly and as soon after eating as possible, (3) topical fluoride applications, (4) fluoridation of water supplies, and (5) daily topical fluoride when indicated. The U.S. Department of Agriculture estimates the yearly consumption of sugar per child at 100 pounds. Research in many areas indicates that when sugar consumption is controlled, the occurrence of dental decay is likewise controlled. If, for instance, a pound of candy is consumed at one time, the decay process is limited to 30-90 minutes after this intake, but if this pound of candy is consumed a piece at a time all day long, the decay process is practically continuous, ending only after the last piece is eaten. Thus, chewing gum, hard, or "sucker type" confections or chewy type candies cause more decay than a piece of softer, more readily dissolved candy. Carbonated beverages containing flavoring acids plus sugar cause decalcification of the enamel of teeth.



Progress of decay. Left to right (1) Early stage of dental decay. The enamel has been penetrated. (2) The softer dentin has been attacked. (3) The pulp has been killed and an abscess formed. (4) The molar is extracted. The bicuspid is abscessed.

Elimination of between meal sweet snacks and the substitution of more nutritious foods such as nuts, fruits, popcorn, cheese, etc. is one way to reduce acid formation on the teeth.

Controlling the intake of sugar is an individual problem and one which education alone can solve. The American Dental Association, the American Medical Association and the National Congress of Parents and Teachers have all prepared statements relating to the sale of sweets in schools. These statements are available upon request to the American Dental Association.

Tooth brushing is effective in preventing and controlling tooth decay, but "when" and "how" the brush is used is very important. Dental scientists know that the acid producing bacteria are active on the sugars remaining on the teeth within two or three minutes, and this single process lasts from 30 to 90 minutes. Toothbrushing, therefore, is most effective when done immediately after eating whether it be regular meals or snacks.

The purposes of toothbrushing are to remove food particles from between the teeth and from the crevices of the chewing surfaces, to help prevent tartar deposits from forming on the teeth, and to stimulate circulation of the blood in the gums.

Place the bristles of the brush pointing toward the roots of the teeth. Rotate the brush so that the bristles sweep down over the gums and teeth in the direction of the biting or grinding surface.

Brush the outside surfaces of the upper and lower back teeth.

Brush the inside surfaces of the upper and lower front teeth.

Brush the chewing surfaces of the upper and lower teeth.

Brush the inside surfaces of the upper and lower back teeth.

Brush the outside surfaces of the upper and lower front teeth.

Some general rules which should be followed are:

Brush the teeth immediately after eating.
Place the bristles of the brush pointing toward the roots of the teeth.
Rotate the brush so that the bristles sweep down over the gums and teeth in the direction of the biting or grinding surface.
Brush the upper teeth with a downward motion.
Brush the lower teeth with an upward motion.
Brush the chewing surfaces with a scrubbing stroke.
Brush each area at least ten times.
Brush the surfaces next to the tongue as well as those next to the cheek.
Brush the teeth of each jaw separately in a definite order.
When toothbrushing is not possible, vigorous rinsing of mouth should be done.

"It's The Brushing That Counts" is a slogan used by the American Dental Association. Toothpastes, powders, and liquids are only "aids" in keeping the teeth clean. The manufacturers' claims that their products will stop decay, cure bad breath, etc. have not been based on scientifically proven methods. Some are very pleasant to use, but it should be remembered that they are only "aids" to proper cleansing by the toothbrush. As yet no therapeutic dentifrice has proven effective.

The Toothbrush

Many persons ask, "What kind of toothbrush should I use?" This question can perhaps best be answered by listing the characteristics of a satisfactory brush: a flat brushing surface, firm bristles and a head sufficiently small to permit access to all surfaces of the teeth. For children a **broad handled** brush is preferable.

Toothbrushes should be kept clean and allowed time to dry between use. It is desirable to have two toothbrushes and to use them alternately. Toothbrushes should be replaced frequently to maintain maximum effectiveness.

Topical Fluoride Applications

The term "topical application of fluoride" refers to the use of a fluoride solution on the surfaces of the teeth. In making the application, the dentist, or dental hygienist, cleans the teeth, dries them thoroughly and then applies the solution allowing it to dry on the teeth.

Dentists recommend that a series of applications be given at the ages of 3, 7, 10 and 13 years so that the teeth may be treated shortly after they erupt. Four separate applications are given at each age. Treatments may be given at other ages when the applications have not been made at the recommended times.

Another fluoride solution is recommended for one application each year.

Many research studies have been made on the topical application of fluorides. Results among large groups of children show that, when given as recommended, these treatments will reduce the incidence of new decay by about 40 per cent on the average. The American Dental Association recommends that, in areas where the drinking water is deficient in fluorides, and fluoridation of the water supply is not feasible, topical fluoride treatments be used routinely. Application of fluoride will not halt decay already started but will help prevent new decay.

Fluoridation

This public health measure refers to the adjustment of the fluoride content of a water supply upward to approximately 1 p.p.m. (one part fluoride to a million parts of water) the optimum amount.

It has been repeatedly observed that the teeth of children residing since birth in areas where the water consumed contained approximately 1 p.p.m. of fluorides had teeth with about two-thirds less tooth decay than children drinking fluoride-free water.

Fluoridation has been developed to the degree that it is considered a simple routine process for waterworks employees.

Fluoridation does not affect the taste, color, or odor of water and is inexpensive, costing about 10 cents per person a year.

That fluoridation of water supplies is a safe and effective method of reducing tooth decay is attested by the fact that many scientific bodies have approved and are supporting fluoridation. Among these are the American Dental Association, American Medical Association, American Osteopathic Association, American Association for the Advancement of Science, American Public Health Association, U.S. Public Health Service, Association of State and Territorial Health Officers and National Research Council. Missouri State Dental Association and Missouri counterparts of these organizations have also approved this public health measure.

The fluoridation of a community water supply is the best method of insuring the availability of adequate dietary fluoride to all children in the community. Because of their possible misuse and probable ineffective use except under careful professional supervision, it is suggested that no other form of dietary fluoride be used except upon the direction of a dentist or physician.

Recent research on dental caries, in both animals and humans, has shown that an additional deterrent to dental caries is gained by daily use of fluoride gels. This is a projection of the commonly accepted procedure of using fluoride toothpastes. In the use of fluoride gels, however, the patient must apply the agent with a disposable tray or chewing device to the teeth for a four-minute period daily. This, in effect, is similar to a topical application in the dental office except that the agent is reduced in strength and is not preceded by tooth cleaning with pumice. The frequency of this method has not been established and is currently being used only for patients with rampant decay. If all preventive measures are used, tooth decay can be prevented.

Malocclusion

Malocclusion may be defined as irregularities in tooth position or the interference with the normal growth and development of the jaws. When upper and lower teeth do not come together in correct relationship (occlusion), malocclusion exists.

Malocclusion is probably influenced to a great degree by inherited characteristics and by such conditions as delayed eruption of teeth, dental caries, facial bone structure and the space left by the premature loss of primary teeth. Habits such as thumb or finger sucking, lip biting, cheek sucking and mouth breathing, may also contribute to this condition. The child should be taught the results of these practices as soon as he is old enough to understand.

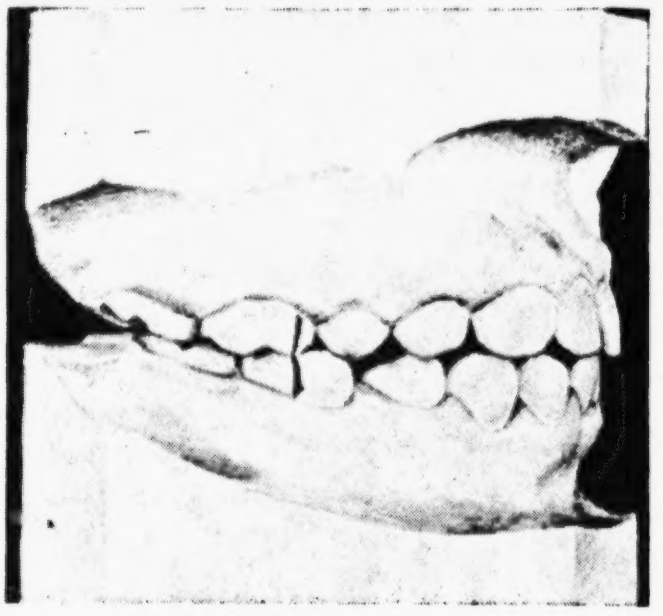
Malocclusion may interfere with proper chewing, cause facial deformities which may lead to emotional disturbances, contribute to speech defects, or cause gum diseases. Irregular teeth may more easily retain food particles which cause tooth decay.

Early and regular dental care by the family dentist may assure the early detection of these deformities. The family dentist may do the less complicated and time-consuming corrective work, or he may refer the child to a dental specialist (orthodontist) who corrects malocclusion.

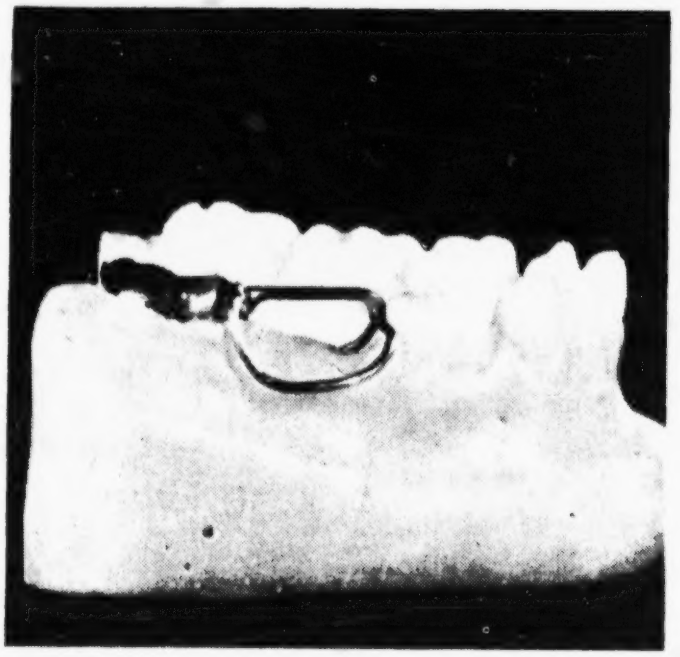
Early dental care will help keep the teeth in correct position and prevent tooth irregularities due to premature loss. If a primary tooth is lost a space maintainer will keep the teeth in correct position. If a permanent tooth is lost, it should be replaced.

Preventive orthodontics is a new and expanding field for dentistry. It has been estimated that 75% of all malocclusion can be prevented by early detection and treatment of tooth irregularities. Much of the treatment can be provided by the general practitioner and the pedodontist. These conditions include some of the following: over-retained deciduous teeth, malrotation of one tooth in the arch, crossbites in both front and back teeth, improper eruption of permanent teeth and extra teeth. This type of service requires periodic reexamination and reevaluation of the teeth and jaws.

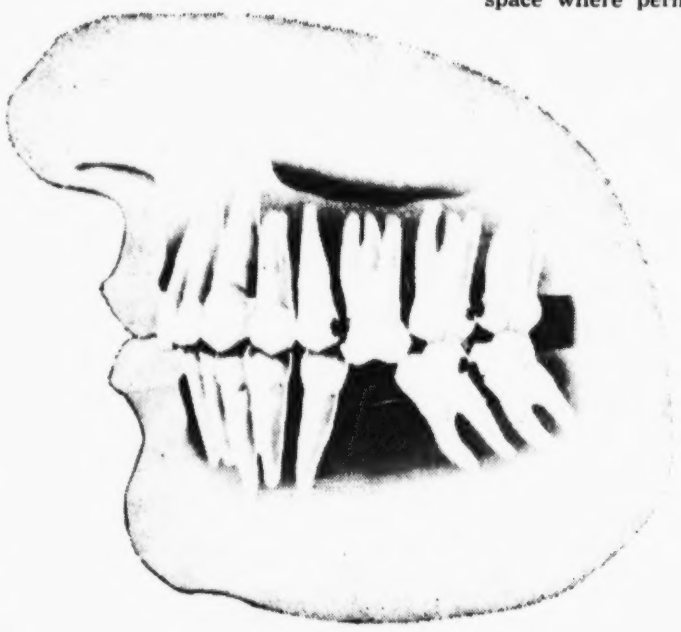
The lower jaw is underdeveloped. In the upper jaw, the teeth are protruded probably due to some habit such as finger sucking or mouth breathing.

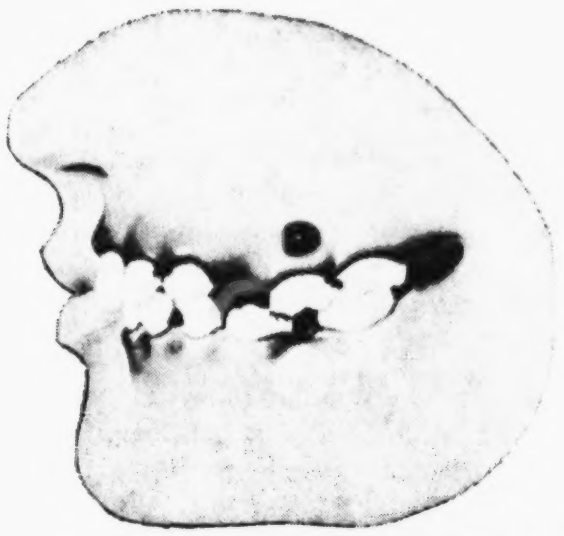


The completed case, after orthodontic treatment. Note the proper alignment and occlusion.



Space maintainer prevents shifting of teeth into space where permanent teeth will erupt.

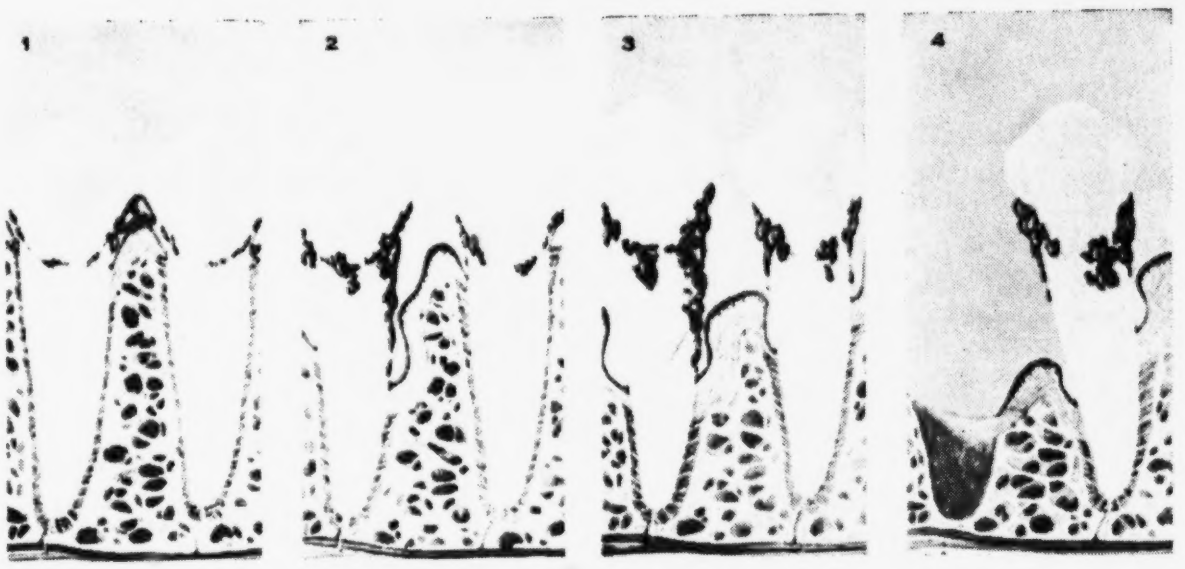




Effects of Loss of a Deciduous Molar

Periodontal Diseases

Periodontal (around the tooth) diseases are those affecting the soft tissues (gingiva) of the mouth and the supporting structures of the teeth. The supporting structures include the periodontal membrane (tissue that joins the tooth to the bone), and alveolar bone (that portion of jaw bone that carries the teeth). Many of these diseases begin in childhood as gum infections due to improper oral hygiene or to irregularly positioned teeth.



PROGRESS OF PYORRHEA

Left to right: (1) Irritations cause gums to withdraw from teeth. (2) Further destruction. (3) Pyorrhea has destroyed most of the tissues. (4) One tooth is lost—the other weakened.

Gingivitis (inflammation of soft tissue around necks of teeth) is the most common form of periodontal disease. The inflammation is usually caused by a local accumulation of soft and hard deposits (tartar) on the teeth, packing of food between the teeth, improper tooth brushing and trauma. It must also be kept in mind that systemic diseases such as blood diseases, malnutrition, and vitamin deficiencies may produce a gingivitis. Most of these conditions may be prevented or curtailed by proper tooth brushing, well balanced diet, and regular visits to the dentist. None of these conditions should be treated until they have been properly diagnosed by the dentist.

Below are listed the common types of periodontal diseases that are most frequently seen in children according to age groups.

Herpetic gingivitis—An infectious and contagious form of gingivitis affecting the young preschool and early school age child (3-10 years of age). It is produced by a virus (Herpes) that may be contracted from other infected persons through direct contact (drinking vessels, eating utensils, etc.). The lesions are small and round and may appear on the gingiva, tongue and cheek. The mouth and tongue are sore, making it difficult for child to chew or swallow. Treatment is best given by the dentist and care should be taken to isolate the child and his personal materials.

Catarrhal* gingivitis—This is usually a diffuse inflammatory disease which may involve all areas of the mouth and occurs most frequently in poorly nourished and chronically ill children. The causes of Catarrhal gingivitis includes such things as thermal trauma (hot, spicy foods), chemical agents (lye, acids), or by drugs (aspirin, sodium perborate, barbiturates). The gingiva in these cases become ulcerated and show areas of dead tissue.

Vincent's Infection—(Trench mouth, necrotic gingivitis). An infection of the gingiva caused by organisms. The infection may follow any illness or period of dietary deficiency and is more commonly seen in children in adolescence and early adulthood (12-18 years). The gingiva is swollen, easy to bleed, tender and painful. This disease is not frequently seen, but is often suspicioned by many persons.

*Catarrhal—inflammation of a mucus membrane

Gingival hyperplasias—(Excessive growth). May be seen in the adolescent child due to alterations in hormonal balance or in some children receiving anti-epileptic drugs such as dilantin.

Periodontitis (pyorrhea)—Is an advanced stage of gingivitis wherein the tissues supporting the teeth are involved. Chronic irritation of the gums by continual accumulation of hard and soft deposits results in recession of the gums. This in turn exposes the tissue fibers and bone around the tooth which becomes infected with loss of structure. Many of these conditions start during the latter part of the mixed dentition (8-12 years) because of poorly aligned teeth and poor oral hygiene. This disease can be prevented and controlled by having the dentist periodically remove deposits around the teeth, by proper brushing, gum massage and adequate nutrition.

Nutritional and Oral Diseases

During the formative stage of the mouth and teeth, good nutrition is necessary. Proper nutrition for the calcification of the teeth is no different from that necessary for bone calcification and for growth and good health in general.

In view of prevention of dental disease by diets, only one element has been found necessary. This element is fluorine in the concentration of 1 P.P.M. (1 mg. %) in the drinking water. If a child is born and reared in a community that has either natural or artificially fluoriadated water supplies, the child can expect to have 60-70 per cent fewer decayed teeth than children not so fortunate. While the various vitamins, i.e., Vitamin A. D, and K, are useful in growth and development of tissues, they are not proven beneficial in keeping the teeth from being attacked by dental decay. Likewise, dentifrices, chewing gum, mouth washes, and medicated tooth pastes have not been proven beneficial in the reduction of dental caries.

The type of food and the frequency eaten are more important than additional vitamins, proteins and calcium bearing foods. Refined sugar in the form of pastries, sticky candies, and sweetened desserts are the most harmful in causing decay in teeth. This is more pronounced in children who consume these kinds of foods several times per day. If these foods can be limited to meal time and followed by toothbrushing or even water rinsing of the teeth, little damage is done. However, many children have in-between-meal and pre-bedtime snacks of sweet foods which increase the attack of the resulting acids on the teeth.

Children who suffer from rampant dental caries (i.e. all teeth have cavities) may be placed on a sugar-restricted diet. This diet limits the amount of carbohydrate that may be eaten per day and eliminates entirely the refined sugar foods. This diet is intended for therapeutic purposes to remove the food necessary for certain decay-producing bacteria to propagate and is therefore used for only short periods of time and for specific patients.

Home Care

Since the primary teeth begin erupting by the 6th month of age, and all of these teeth are present by the end of the 3d year, oral care should commence during this period. The gums are very thin and easily injured in the young child which precludes the use of a toothbrush at an early age. The teeth of the child up to two years of age may be cleaned with a swab or rinsed with water. The toothbrush may be used at two years, but should be kept away from the gums. Between the ages of 3 and 4, the teeth and gums may be brushed and other oral hygiene habits taught to the child.

The teaching of proper oral hygiene and especially toothbrushing, requires 3-5 instructional periods of 20 minutes each by the dentist or dental hygienist. In the very young child, a soft bristle brush is preferred. In the older child, a 2-row, firm bristle brush with a broad straight handle is best for keeping the teeth clean. The type of toothpaste or powder should be prescribed by the dentist, since there are some that are more effective than others in removing stains and debris.

Newer items for home care include the electric powered tooth brushes, and a device to flush the teeth with water. Electric tooth brushes have been in use long enough to have been proven by clinical research, and are now acceptable by the American Dental Association. These are just as effective or perhaps more so in children than the hand brush. The advantage for their use in children is their high "novelty" value.

The devices to irrigate between the teeth may be operated by pressure from the water tap, or may be powered by electricity. The advantage of this appliance is that it cleans more thoroughly between the teeth than does the tooth brush. Their use should be controlled by the advice of the dentist for each patient concerned.

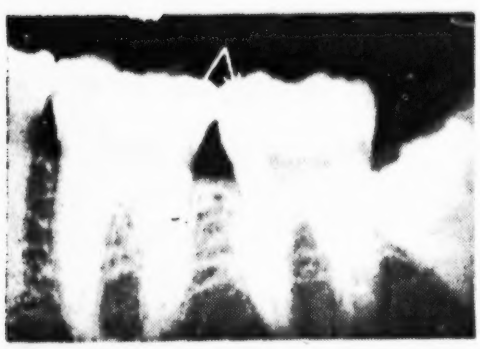
What Is the Standard Classification of Types of Dental Examination and Inspections?

Types

1. Complete examination, using mouth mirror and explorer, adequate illumination, thorough roentgenographic survey; when indicated, percussion, pulp vitality tests, trans-illumination, study models, and laboratory tests
2. Limited examination, using mouth mirror and explorer, adequate illumination, posterior bite-wing roentgenograms; when indicated, periapical roentgenograms
3. Inspection, using mouth mirror and explorer, adequate illumination
4. Screening, using tongue depressor, available illumination

Note: Types 1 and 2 can only be given in dental offices or in specially prepared clinics.
Types 3 and 4 can be given under school conditions.

X-Rays—(Roentgenograms)



Shows fillings and an impacted third molar.

Beginning (incipient) decay.

Decay involving pulp (infection) and resultant abscess.

It is generally agreed by school administrators and dentists that the entire school population should undergo some sort of dental examination each year. Since it is considered most practical to conduct this examination in the school, some of the benefits and limitations of school dental inspections should be explained:

Possible benefits of school dental inspections:

1. Serve as a basis for school dental health instruction.
2. Build a positive, favorable attitude in the child toward the dentist and dental care.
3. Motivate the child to seek dental care.
4. Serve as a fact finding experience for students, teachers, dentists and others concerned with school dental health.
5. Provide base line data for evaluation of the school dental health program.
6. Provide information as to the status of dental needs so the advisability of supporting a sound dental health program may be recognized.

Possible limitations of school dental inspections:

1. Even though the statement may be made that the school dental inspection is not intended to replace a complete and thorough examination, parents and children frequently accept the inspection on this basis and depend on it rather than on a complete dental examination by the family dentist.
2. It is difficult to institute a definite follow-up program to assure that needed dental care has been done.

DENTAL EDUCATIONAL TERMS
WITH WHICH THE TEACHER SHOULD BE FAMILIAR

Dental caries is a localized disease process that destroys tooth structure and thus produces cavities in the teeth. Dental caries is commonly called tooth decay.

Mandible is the lower jaw.

Maxilla is the upper jaw.

The **temporo-mandibular joints** are those just ahead of each ear on which the mandible or lower jaw swings.

The **gingiva** or as it is commonly referred to as the "gum" is the soft tissue surrounding the teeth and extending about halfway down to the junction of the inner surface of the cheek.

The **crown** is the visible part of the tooth under normal circumstances.

The **enamel** is the hard material (hardest in the body) in the form of a shell covering the crown or "coronal" portion of the tooth.

The **dentin** is the material inside the enamel shell forming the main body of the tooth. It has many tiny canals, and many nerve fibers, is slightly elastic, although not visibly so, and is very strong.

The **pulp chamber** is the chamber in the central area of the tooth which is filled with many different kinds of tissue, such as blood vessels, main nerve supply of the tooth, connective tissues and others.

The **pulp canal** is a passageway for the blood vessels and nerve fibers to the tip of the root (apex) which continue to the rest of the body.

The **root** is that part of the tooth which is normally beneath the gum margin and anchors the tooth in the jawbone. It is covered with cementum.

The **peridental membrane** is a layer of tissue made up of tiny fibers that helps hold the tooth in its socket.

Malocclusion is irregularity of tooth position and poor fitting together of the teeth on closing the jaws.

Periodontal diseases are diseases of the gums and other supporting structure of the teeth.

Gingivitis is one of the periodontal diseases and is an inflammation of the gingiva or gums.

Vincent's Infection (trench mouth) is a disease which attacks the gums and also other parts of the mouth and throat.

Periodontitis (Pyorrhea) is one type of periodontal gum disease which usually originates as gingivitis and if left untreated the inflammation spreads, the gum withdraws from the tooth, forming a pocket which fills with bacteria and pus. This process weakens the support of the tooth and may cause its loss.

QUESTIONS AND ANSWERS

Questions and Answers on Primary Teeth

1. How many teeth are present in the primary set?
   Answer: There are twenty.

2. When do the primary teeth come in the mouth?
   Answer: They begin to appear between the fourth and seventh month, and may all erupt by 2½ to 3 years.

3. Why are the primary teeth important?
   Answer: For thorough chewing of foods, to help guide permanent teeth into position, to aid in normal jaw and facial development, to help prevent tooth irregularities, for the development of speech and for good esthetics.

4. Should cavities in primary teeth be filled?
   Answer: Yes, in order to check decay, keep the teeth useful for as long as they last and to prevent toothache. It should be remembered that restorations in the primary teeth are just as important as restorations for permanent teeth, and that the average primary tooth must serve the child for 5½ to 6 years. In fact, the last deciduous tooth is not lost until the 11th or 12th year of life.

Questions and Answers on Oral Health Services During the Period of Primary Dentition

1. What is considered a healthy individual?
   Answer: Health is a state of complete physical, mental, and social well being and not merely the absence of disease.

2. When should the preschool child be brought to the dentist?
   Answer: The preschool child should be oriented into this new environment and procedure, which necessitates an appointment with a dentist between the second and third year.

3. What is to be done at this first dental appointment?
   Answer: The dentist will examine the child's mouth and teeth and denote frequency with which the child should see a dentist, based on his susceptibility to decay. Some children may have to return every four months, others twice a year and some once a year.

4. What diagnostic aids will be used in making the diagnosis for the child?
   Answer: The dentist may use posterior bitewing X-rays which are recommended at least once a year and full mouth X-rays when the child is at least 3 years of age and repeated every 18 months to 2 years.

5. What is the purpose of the full mouth X-ray survey?
   Answer: The X-ray analysis is to study development of the child's jaw and teeth, to determine the dental abnormalities that may be present and to check the progress of treatment, as well as to discover tooth and bone disease.

6. What additional aid may be used for checking the child's dental health?
   Answer: Salivary analysis for specific bacterial populations, plaster reproductions of the teeth (study models), diet analyses and other laboratory tests.

7. What specific patient should be seen early and frequently in the dental office?
   Answer: The cleft palate patient should have postoperative observation and supervision regardless of whether surgery has been successful or not. This is also necessary especially if there are appliances in the child's mouth.

8. What is the purpose of oral health education?
   Answer: Oral health education for the child and parent is necessary for the correcting of oral habits, for instruction in proper toothbrushing techniques, the institution of low sugar diets, the importance of keeping appointments and the response to recall, and proper appreciation of early operative treatment.

9. How often should the teeth be cleaned by the dentist?
   Answer: It is recommended that most children have a thorough prophylaxis at least twice a year.

10. What types of restorations are used in the primary teeth?
    Answer: In view of low value esthetics in the 3, 4, and 5 year old child, silver amalgam is recommended for both posterior and anterior cavities.

11. What is malocclusion and what effect does it have on the health of the child?
    Answer: Malocclusion is an incorrect relationship between the upper and lower teeth when closed together or irregularities in tooth position. Malocclusion may impair health if it seriously restricts chewing or speech or if it endangers the teeth or supporting structures, or if it imposes a psychological handicap. It is not intended to interpret that all malocclusion results in malnutrition, but this is a possibility that should not be overlooked.

12. What is bruxism?
    Answer: Bruxism is the term used to denote the child who grinds his teeth either during periods of the day or at night during sleep.

13. How are these habits broken or corrected?
    Answer: The habit of bruxism is treated by sympathetic understanding by the dentist, teaching the child how to relax, and programs for overcoming his tension. If severe enough, appliances may be used at night to assist in breaking the habit. This type patient may require the assistance of other medical and paramedical personnel.

14. What is preventive orthodontics?
    Answer: Preventive orthodontics is the practice of those measures or principles which may be effective in guarding the individual child against the development of oral and dental facial abnormalities.

15. What are some of the aims of preventive orthodontics?
    Answer: The aims of preventive orthodontics include correcting harmful sucking habits, the promotion of good operative dentistry, the early recognition and treatment of mal-erupted teeth, the surgical treatment of impacted teeth, early detection and removal of supernumerary or extra teeth, guiding the sequence of exfoliation of the primary teeth and the proper eruption of the permanent successors, preventing the premature loss of primary teeth before their normal exfoliation time by early and regular dental care, preventing the loss of permanent teeth which make up the complete dental arches, and preventing crossbites of anterior and posterior teeth, and other abnormalities and conditions of malocclusion.

16. What is a good guide to proper tooth brushing?
    Answer: (1) Always brush the teeth in the direction towards which they grow, brush down on the upper teeth and up on the lower, (2) when you brush, start by placing the brush along side the teeth with the bristles pointing toward the roots of the teeth or gums. (3) rotate the bristles toward the biting surfaces so that they brush the gums and teeth with a sweeping motion, (4) repeat this stroke at least ten times in each area, (5) be sure to brush the inside and outside of both upper and lower teeth, don't miss an area, give them all fair attention, (6) brush the chewing surfaces of the teeth with a back

and forth motion and (7) don't rush, do it right. Proper tooth brushing takes at least two minutes. Tooth brushing should be performed after each meal. When this is not possible, thorough rinsing is advised.

17. What is the philosophy behind the practice of dentistry?
Answer: The philosophy behind the practice of dentistry is to prevent infection of the mouth, to minimize pain during treatment, to improve and maintain occlusion of the teeth and finally to prevent the loss of teeth.

18. What are the duties of the dentist?
Answer: (1) The dentist looks for hidden cavities by taking X-ray pictures of teeth; (2) he restores carious lesions by various metals or other restorative materials; (3) he examines the gums to see if they are diseased, he cleans the teeth thoroughly, he finds irregularities of teeth and jaws; (4) he prevents and stops toothaches; (5) he applies fluoride treatments to the teeth to help prevent the formation of new cavities; (6) he replaces lost teeth with bridges or dentures; (7) he discovers and eliminates any disease or abnormalities of the mouth; (8) he treats soft tissue infections of the mouth and he corrects the deformaties of the jaws, fractures of the jaw bones and other orthopedic problems of the jaws; and (9) he is informed and ready to teach proper practices and to give advice to individuals, groups and the community relating to oral health.

19. What are the specialties of dentistry?
Answer: (1) Oral Surgery—treats infections of teeth, jaws and facial fractures.
(2) Prosthodontics—makes artificial dentures.
(3) Pedodontics—treats oral problems in children.
(4) Orthodontics—treats occlusal problems and tooth irregularities of the dentitions.
(5) Oral Pathologist—studies the oral tissues in the patient and in the laboratory to assist in diagnosis.
(6) Public Health—treats the community by education and preventive measures.

20. What are some of the major causes of anxiety in dental patients, and especially children?
Answer: The cause of anxiety in the child may be attributed to overfearful parent prior to the visit, over-protectiveness of the parent, threats and intimidations of parent before visits to the dentist, lack of familiarity with procedures to be used and fear of pain.

21. Should a child be rewarded for his participation in a dental appointment or visit to the dentist?
Answer: It is the opinion of most dentists that rewards should not be given to the child for having his teeth cared for or an examination performed. Such rewards are overdone in our society and should be discouraged because of the fact that they would be given in payment for treatment that is necessary.

22. What is the meaning of the terms "d-e-f?"
Answer: These terms are used for describing the appearance of a decayed tooth (d), for a tooth to be extracted (e), or a tooth which is filled (f). This is abbreviated terminology which is used by the public health dentist or the epidemiologist to indicate the teeth that are attacked by caries, the one that is so far broken down that it requires extraction or those that are filled with restorations.

23. What are supernumerary teeth?
Answer: These are teeth that appear in the jaws or in the mouth which are in excess of the number of teeth which are supposed to be present.

24. What is the meaning of the term "D-M-F?"
Answer: This is another term that is used to describe a permanent tooth that is decayed (D), missing (M), filled (F). The reasons for this abbreviated style are the same as above.

25. Dental caries affects what per cent of our population?
Answer: Approximately 90 to 95 per cent of our population have dental caries.

26. What are the requirements for initiating dental caries in the mouth?
Answer: They include bacteria, sugar-type diet, and a susceptible type of tooth, or teeth.

Chapter Three

INSTRUCTIONAL PROGRAM

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Instructional Program

DENTAL HEALTH EDUCATION FOR KINDERGARTEN THROUGH THIRD GRADE

Good health is of paramount importance if a child is to live his fullest. The body is a unit; therefore, dental or oral health cannot be separated from total health. Dental disease is the most common disease of civilized man, occurring in 95% of all people. In one Missouri city it was found that 86% of 6-year-old children are in need of dental care for the primary teeth. The greatest need was found in 7 and 8 year olds where the percentage of required corrective care is 89%* This seems a human waste since it is estimated that a large percentage of dental disease can be prevented. The teaching of preventive measures and proper dental health habits, therefore, is an important phase of any well-rounded educational program in developing the total child.

Specific Objectives

The overall objectives are to develop understanding, habits, attitudes, and skills promoting good dental health by teaching:

1. How, when and why to care for the teeth
2. Foods which help achieve and maintain better dental health
3. The understanding and appreciation of the role of the family dentist

Dental Characteristics At This Age Level

Kindergarten—All 20 primary teeth normally present, though some children may have begun to lose front teeth. The teeth are aligned in an oval shape and are positioned vertically with the upper and lower incisors touching each other on their biting surfaces.

1st Grade—Most 6 and 7 year-olds will have their four sixth-year molars—the first permanent molars —which erupt behind the last primary molar. This is a critical time, for many 1st permanent molars are lost due to neglect at this age. This is tragic, for the presence of the six-year molars in their normal position has a direct bearing on the proper positioning of other permanent teeth later on, as well as normal growth and development of the jaws and musculature. At this age some of the front teeth may be loose or already lost, and will be in the process of being replaced by the upper and lower permanent incisors in the front of the mouth. There may be some crowding of lower permanent anterior teeth for a time.

2nd Grade—By this age the child should have all 4 first permanent molars well erupted, and the eight incisors—four in the upper jaw and four in the lower jaw—will be well along in erupting.

3rd Grade—At this age, the 8 front permanent teeth should be well erupted and in good position, though normally there will be some spacing between the upper incisors. The remaining primary teeth—three on each side, upper and lower jaw or 12 altogether, will be situated between the permanent incisors in front and the 1st permanent molars in back. No more teeth are normally lost until about the age of 10 to 12.

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*"Oral Health Survey of 29,550 Kansas City, Mo. Elementary School Children." Wells, Carter, Copeland Coe. **Missouri Dental Journal,** October, 1958.

SUGGESTED TEACHING UNIT: GOOD TEETH FOR YOU

Outline of Content K-3

I. What are the continuing dental hygiene concerns of children, K-3?

- A. Every child should have his own toothbrush and a place to keep it.
- B. Learn and use a correct method of tooth brushing.
- C. Encourage every child to secure professional assistance.
  1. Visit dentist as advised by dentist.
  2. Secure needed dental service.

II. What are the foods that help us have good teeth?

- A. Good diet should be stressed both for dental health and physical health. (Refer to the Daily Food Guide—available from Department of Agriculture, Washington, D. C.) Page 6.
- B. Encourage eating food high in calcium and Vitamin C and content. (Milk, raw cabbage, citrus fruits, cod liver oil, or vitamin preparation.)
- C. Encourage substitutes for sweets for between meal snacks.
  1. Milk in place of soft drinks.
  2. Nuts, fresh fruit and raw vegetables in place of candy, cake and ice cream.
- D. Certain foods help exercise the gums and cleanse the teeth: Celery, apples, raw carrots, whole grain cereals.

III. What are our teeth used for? (function)

- A. To chew food.
- B. As an aid to good speech.
- C. For appearance.

IV. What do we know about our teeth? (structure)

- A. A tooth has two parts:
  1. Crown—above the gum.
  2. Root—below the gum.

Related Activities K-1

Kindergarten

Stress a good method of tooth brushing by means of morning health visits. Emphasize fact that each person should have his own toothbrush.

Have a well-lighted mirror placed where the children can observe their own teeth.

Collect pictures of children with clean, pretty teeth.

Show and discuss films and filmstrips on care of teeth.

Talk about how the dentist is our friend.

Dramatize a visit to the dentist.

Have a chewing party at which the refreshments are food for good teeth. Suggestions: carrots, apples, celery, popcorn, other raw vegetables and fruits.

Oral Vocabulary

apple	food
brush	water
dentist	chew
teeth	milk
carrot	clean
care	orange

GRADE I

GOOD TEETH

Dramatize a correct way to brush teeth by using hand mirrors and sterile swabs. Some rooms may arrange for individual brushes.

Have 2 children eat graham crackers to show how particles of food collect on the teeth. One child may brush his teeth to remove the particles thoroughly. The second may rinse mouth to show how rinsing helps when brushing is impossible.

Outline of Content K-3

B. The tooth is supported by gums and bone.

C. Teeth are shaped for the work that they do.
   1. Biting or cutting (incisors)
   2. Breaking and tearing (cuspids)
   3. Crush and tear (bicuspids)
   4. Grinding or chewing (molars)

D. The hard material that covers the tooth is enamel.
   1. Injury to the enamel causes a hole. (caries or cavity)
   2. Biting hard objects may damage the enamel.
   3. Other hazards to teeth: Cracking nuts, chewing pencils, ice, etc.; finger sucking; hard blows; habitual resting of face or jaw on hands.

E. The center of the tooth contains the "nerve." Damaged nerve causes toothache.

F. We have two sets of teeth which grow naturally.
   1. The first set of teeth
      Form the arch and save space for the permanent teeth.
      Are 20 in number.
      Need correct care.
   2. The permanent teeth
      Should last a lifetime.
      Are 32 in number
      Need correct care.

Related Activities Gr. I

GRADE I (Continued)

Make posters using stick figures and simple caption. Example: "I Brush My Teeth."

Divide class into committees. Make dentifrice using 2 parts baking soda and 1 part salt. Each child labels his individual envelope: TOOTH-POWDER—(Dissolve in water for use).

Ask a dentist to visit the group and talk to the children on dental care. Write notes to the dentist.

See films and filmstrips on dental health and discuss them. Keep a calendar of a child who has shed a first tooth. Mark the day the tooth was shed—then mark the date the new tooth appears. Use the occasion to explain the uses of the first teeth and the importance of the second (permanent) teeth.

Discuss reasons for thinking of the dentist as a friend. Let the children make simple statements that the teacher will write on the board.

Explain that the teeth and mouth can be swished with water if brushing is not possible. Let the pupils practice this.

Bite and chew apples or carrots to note the teeth used for biting-tearing-chewing.

Make a wall chart showing "What we should eat and drink for good teeth."

Make up riddles about appropriate snack foods. Example: I am red. I am round like a ball. I help clean teeth. What am I?

Make a booklet of Tooth Helpers—brushes, food, dentist, etc. Write simple legends under pictures.

Vocabulary (oral and sight words as needed)

dentist	brush	eat	drink
milk	teeth	bite	lunch
breakfast	tooth	chew	dinner
apple	carrot	care	clean
food	orange	water	eggs
grow	wash	after	

Related Activities Gr. II

GRADE II

YOUR TEETH

Arrange for a child who will visit the dentist to find out when and how to brush teeth and report to the class.

Use the tune "The Mulberry Bush," sing "This is the way we brush our teeth" using appropriate actions.

Ask the school nurse to show a model of children's teeth and point out 6-year molars and stress the importance of caring for them. Use mirrors to discover 6-year molars.

Encourage regular visits to the dentist. Use parent conferences, cooperate with dentist. Children with missing teeth will note difficulty in biting and chewing, and speaking. By charts show how the first teeth hold a place for the permanent teeth.

Make a picture dictionary showing words related to care of the teeth.

With use of a sketch or picture identify top of tooth (crown) tooth under the gum (root). Have a "Chewing Party" using apples, carrot strips and note different teeth used in biting-tearing-chewing.

Work out rhymes of jingles to help children remember the time to brush teeth. Children make a copy to take home.

In the study of Community Helpers, choose the dentist for some intensive study.

Look for pictures labeled DENTIST and others showing him at work in his office.

Have pupils use mirrors of their own to examine their own upper and lower teeth. Use a clean toothpick when pointing to a tooth.

Have children try to locate teeth used for biting, for tearing and for chewing.

Match permanent teeth the child may have with the chart.

Related Activities Gr. II & III

Obtain a model of a set of teeth and a toothbrush. Demonstrate a good method of brushing the teeth.

Discuss value of eating raw vegetables that help clean teeth.

Vocabulary:

decay	tear
dentist	crown
chewing	gum (s)
cavity	fruit
raw	drink
sunshine	loose
sweets	nurse
white	clean
brush	polish
grind	jaw
bite	vegetable
smile	candy
juice	

GRADE III

YOUR WONDERFUL TEETH

Children who have visited a dentist's office tell what work was done. Teacher list these experiences on the board under the heading "How the Dentist Helps." Later creative stories are written about these.

Make up rhymes about Dr. _____ (personal dentist) and his work.

Role-play a visit to a dentist's office.

Children may examine their teeth in a small mirror to note the placement of the sixth-year molar. (Compare their teeth with a chart.)

Discuss the chart showing placement of the primary teeth and permanent teeth in the jaw.

Study and discuss chart showing parts of a tooth.

Obtain a sterilized extracted tooth for class study. The tooth may be cut in half to show the structure.

Dramatize replacement of primary teeth by the permanent teeth having pupils take positions of these teeth.

Related Activities Gr. III

Compare the types of human teeth with the teeth of animals.

Have children relate speech difficulties they experienced when primary teeth were lost.

Make dental posters for display.

Use magazine photographs of models and athletic heroes to illustrate the beauty of well-formed, sound, clean teeth.

Demonstrate, discuss and practice a good order for brushing of the teeth.

Children may make dental health scrap-books using pictures from magazines or their original drawings.

Make an inexpensive, effective dentifrice by mixing 1 part salt with 2 parts baking soda. Dissolve mixture in water before using.

Make charts for checking the times the teeth are brushed.
(Film—"Teeth Are to Keep")
(Film—"It's Your Health")

Prepare a dental play for P.T.A. or National Children's Dental Health Week.

Demonstrate how teeth may be cleaned with water if a brush is not available, using "swish and swallow" method.

Make models of foods which are beneficial to the teeth and to the body in general. (These models may be made from a mixture of fine sawdust, a little plaster and liquid paste.)

Outline a large cross section of a molar and have pupils draw inside the outline, fruits and vegetables which aid dental health.

Encourage pupils to chew on alternate sides of their mouths.

Encourage pupils to substitute raw vegetables and fruit for candy, sweetened foods, and sweetened beverages for between-meal snacks.

(Film—"Dental Health How and Why")

Fix up five bottles or test tubes of the same size.

Related Activities Gr. III

Use Sugar Chart. Show the amount of sugar in milk chocolate bar, chewing gum, soft drink, chocolate cake, ice cream cone, 1 glass milk, chocolate.

Vocabulary

brush	chewing
decay	extract
filling	gums
permanent	pressure
necessary	sterilize
regularly	treat
bacteria	bristle
exercise	dental floss
cavity	clean
dentist	fruit
germs	irregular
prevent	molar (s)
stains	raw
replace	sweets
examine	ache
tooth paste	tooth powder

Evaluation

(by end of third grade)

Does each child:

1. Show an interest in personal development of teeth?
2. Know some foods for good health?
3. Know the various kinds of teeth and what each can do?
4. Know ways to protect his teeth?
5. Have a favorable attitude toward the dentist?
6. Realize the value of regular visits to the dentist?
7. Show growth in his general knowledge about the teeth, their functions, and structure?
8. Realize sweets cause dental decay?

Suggested Teaching Aids

FILMS

Audio-Visual Aids Title	Source	Rental or Purchase
Bill's Better Breakfast (k-3)	Division of Health of Mo. Jefferson City, Mo.	Free
Come Clean (4-6)	Division of Health of Mo.	Free
Danny's Dental Date (k-4)	Division of Health of Mo.	Free
Dental Health—How and Why (k-6)	Division of Health of Mo.	Free
It's Your Health (3-6)	Division of Health of Mo.	Free
Jack Goes Western (k-3)	American Dental Association 211 East Chicago Ave. Chicago, Ill. 60611	$3.50
Judy's Smile (k-6)	Division of Health of Mo.	Free
Taro's Adventures in Health (k-6)	Division of Health of Mo.	Free
Teeth Are to Keep (k-6)	Division of Health of Mo.	Free
Save Those Teeth (k-6)	Division of Health of Mo.	Free
Winky the Watchman	Division of Health of Mo.	Free

FILMSTRIPS

Title	Source	
Billy Meets Tommy Tooth (k-3)	American Dental Association	$1.00 (P)
Brush Up on Your Teeth (k-3)	American Dental Association	$1.50 (R)
Kippy and Karen Visit the Dentist and the Market	American Dental Association	$1.50 (R)
Ten Little People and Their Teeth (k-3)	American Dental Association	$1.50 (R)
Let's Visit the Dentist (k-3)	American Dental Association	$1.50 (R)
Tale of a Toothache (k-6)	American Dental Association 211 East Chicago Ave. Chicago, Ill. 60611	$1.50 (R)

SLIDES

How the Royal Family Learned to Be Happy	American Dental Association	$2.50 (R)
The Little Pigs	American Dental Association	$2.50 (R)

Free and Inexpensive Materials:

American Dental Association
211 East Chicago Ave.
Chicago, Ill. 60611

Your Child's Teeth.

Dental Health Facts for Teachers.

Fluoridation Facts.

Elementary School Posters. Four posters to set.

Tooth Decay. What to do about it.

Orthodontics: Questions and Answers.

The Care of Children's Teeth: Questions and Answers.

Toothbrushing.

Diet and Dental Health.

Schour and Massler Tooth Development Chart
Toothbrushing Chart—American Dental Association 65c

INSTRUCTIONAL PROGRAM

SUGGESTED SAMPLE RESOURCE UNIT: SAVE THOSE TEETH

(Grades one, two and three)

Overview:

In the beginning the child is interested in his home and gradually his interest extends to the community. In the community one of the most important helpers is the dentist. The child, at a very early age goes with his parents to visit the dentist. After this visit he is more aware of his teeth. We hope to develop many learning situations regarding the teeth and all phases pertinent to dental health.

Suggested Approaches To The Unit:

It may be introduced in a group discussion. The teacher might ask "Have you lost a tooth yet?" Various responses will be given. From this point in the discussion she should guide the discussion into desired channels. Attitudes toward dental health can be strengthened if habits are formed at an early age.

Outline of Content:

A. Arithmetic:

1. The child should know how many teeth he has.
   a. In Grade 1 he may use a mirror and count them.
   b. In Grade 2 he should remember he has 20 baby teeth.
   c. By third grade he should add to previous learning and know we have two sets of teeth (first set—20 and the second set 32.)
   d. An actual model of teeth can be used for counting purposes.

2. Learn various types of teeth and the uses of each.
   a. There are 8 incisors, 4 upper and 4 lower used for cutting.
   b. There are 4 cuspids, 2 lower and 2 upper used for tearing.
   c. There are 8 bicuspids, 4 upper and 4 lower used for crushing and tearing the food.
   d. There are 12 permanent molars, 6 upper and 6 lower used to grind food.

3. Further questions involving number work:
   a. How many kinds of teeth do you have?
   b. How many teeth have you lost?
   c. How many new teeth do you have?

B. Language Arts

1. Read stories about teeth and the dentist.
2. Make up stories, jingles, riddles, and rhymes about foods which help make strong teeth.
3. Write to a dentist and ask his permission to visit his office when no parents are there.
4. Write a thank you note when you return from your visit.
5. Have parents' written permission on a note such as this:

   Dear Mrs.—Monday afternoon at 2:30 P.M. the class is going to Dr. S. T. Brown's office. This is in connection with our dental unit. We are going to observe the office, the equipment, the dentist, etc. Would it be all right if _____ went with the class? Underline your answer, please. Yes No. Thank you, Mrs. Williams.

6. Learn to recognize the following words:

a. GRADE 1

tooth	milk	white	eggs
teeth	dentist	water	brush
chew	food		

b. GRADE 2

nurse	sunshine	drink	jaw
clean	gums	fruit	eat
poster	picture	germs	
add	permanent	cavity	saliva
molar	examine	polish	cuspid
mirror	bristle	space maintainer	

C. Science and Health:

What are continuing concerns of children K-3 respecting dental hygiene?

1. Encourage every child to secure a toothbrush.
2. Teach a correct method for brushing the teeth.
3. Encourage every child to be concerned about dental caries.

What are the foods that help us have good teeth?

1. Foods listed in the Daily Food Guide in sufficient quantities are essential in having healthy teeth and gums.
2. Sound tooth enamel is dependent on proper amount of calcium.
3. Proper foods do several things for your teeth and body.
   a. Give you energy.
   b. Help you grow and keep well.
   c. Make strong bones.
   d. Make stronger muscles.
   e. Make good teeth.
4. Candy and desserts should be eaten only at the close of a meal. Brush after the meal.
5. Between-meal snacks should consist of fresh apples, pears, oranges, carrot sticks, etc., not sweetened foods or beverages which would form acid and cause decay.

How Are the Teeth Used?

1. Teeth help us chew our food.
2. Teeth help us speak correctly.
3. Teeth help personal appearance.

What Should We Know About Our Teeth?

1. There are various types of teeth.
   a. Some cut
   b. Some break and tear food
   c. Some teeth grind the food

2. Proper oral hygiene is imperative.
   a. Brush after eating. Be sure correct brushing methods are known.
   b. If unable to brush after eating, rinse the mouth.
   c. Be sure children are comfortable while brushing and have a mirror on their eye level to check their teeth.

3. Hazards to our teeth
   a. Don't bite on hard objects as rocks, nuts, shells, metals or pencils.
   b. Discourage the habit of resting the face or chin in the hands as it might result in malocclusion by changing the shape of jaw or facial bones.
   c. Don't chip teeth on drinking fountain.

Enrichment Activities

1. Make posters and booklets on "How I can take better care of my teeth."
2. Read stories and poems and sing songs about teeth.
3. Give a health play.
4. Show films and slides of good dental practice.
5. List good dental habits on a chart.
6. Make a mural.
7. Invite a dentist to come to your class and have him demonstrate proper tooth brushing.
8. Make a dental dictionary.
9. Observe and listen to radio and television broadcasts which promote interests in teeth.

Evaluation

(Oral for younger child. Written for third grade.)

1. All of the _____ teeth come out.
   primary permanent second

2. The second set is the _____ set of teeth.
   primary unhealthy permanent

3. No dentist likes to _____ teeth.
   clean fill remove

Is It True?

1. All of your teeth are the same shape. yes no
2. Teeth of different shapes do different work. yes no
3. The flat teeth tear food. yes no
4. Thin teeth cut food. yes no
5. Six-year molars are primary teeth. yes no
6. Clean, white teeth help you to look nice. yes no

Write the Missing Word.

1. Biting hard things might make a very small_____in a tooth.
2. When there is a little hole in a tooth, the dentist must_____it.
3. If a little hole in a tooth becomes big and hurts, the dentist may have to_____it.
4. Teeth should be brushed after every_____.
5. If you cannot brush your teeth after eating, you should wash out your mouth with_____.
6. You should use only your_____toothbrush.
7. A toothbrush needs to be_____after it has been used, and it needs to be hung up to_____.
8. The right kinds of foods help keep teeth_____and_____.

Check Yourself. Should you:

1. Crack nuts with your teeth?
2. Have the dentist fill any tiny holes in your teeth?
3. Brush your teeth only when your mother tells you to?
4. Learn to keep your teeth clean and white?
5. Use your father's toothbrush?

What Do You Remember?

1. Six-year molars are_____teeth.
2. The front teeth are thin. They_____the food.
3. The sharp teeth between the cutting teeth and the grinding teeth are called the_____teeth.
4. The big, flat teeth in the back of your mouth_____food.
5. Teeth help you_____clearly.
6. If teeth are clean and white, they help you look_____.
7. One vegetable that helps clean teeth is_____.

Instructional Program

DENTAL HEALTH EDUCATION FOR INTERMEDIATE GRADES

Dental decay is largely of our own making, due to excessive use of sweets, and poor oral hygiene.

Education to develop attitudes and understandings should result in the application of certain practices that will prevent dental tragedies.

The outline of content as presented in this unit is a plan for the teachers to use in achieving these objectives at this age level.

Specific Objectives

1. To relate dental health to general health.
2. To understand the relationship of good dental health to appearance.
3. To understand the process of chewing and the function of different types of teeth.
4. To understand the cause of dental decay.
5. To understand the relationship between diet and dental health.
6. To understand the function of a dentist in the over-all health program.

Dental Characteristics at This Age Level.

1. Eruption of cuspids, bicuspids, and second molars occurs.
2. Irregular appearance of teeth may occur and orthodontics (or straightening) may be necessary.
3. Stains frequently occur on teeth and should be removed.

Vocabulary

permanent
temporary
enamel
pulp
decay (caries)
cavities
bristles
digestion
dentin
dilute
X-ray
calcium
phosphorus
gingivitis
Vincent's infection
prevention
periodontal disease
minerals
molars
dentist
fluorine
infection
incisors
erupt
fissures
tartar (calculus)
mastication
drifting
occlusion
pestle
particles
fluoridation
bacteria
rinse
gum tissue
abscessed
vitamins
bicuspids
acid
crown
inherited
primary
malocclusion
mortar

Outline of Content	Related Activities
I. What is the relationship between the foods necessary for good general health and good dental health?	
A. Which foods are necessary for good health?	
1. Groups of the Daily Food Guides	Keep daily food intake for 3 days—check against Daily Food Guide.
a. Three to four cups of milk or milk equivalents.	
b. Four or more servings of vegetables and fruit (one of which should be a citrus fruit or other fruit or vegetable high in vitamin C; one of which should be a dark green or deep-yellow vegetable for vitamin A).	Plan menus to insure proper balance of tooth and bone-building foods.
c. Two or more servings of meat, fish, poultry, eggs, or meat alternates such as dry beans, dry peas, nuts.	Clip pictures from magazines. Arrange on posters or bulletin board to show nutritious in-between-meal snacks.
d. Four or more servings of whole grain enriched or restored breads and cereals. (Vitamin D recommended for children up to 20 years of age. The amount to be recommended by a dentist or physician).	Experiment with the cleansing quality of coarse foods. Use raw carrots or apples. Chew and note how these foods cleanse the sides of the teeth.
	Plan birthday party free from sweets.
	Make puppets using foods for head. Each could tell the story of his life as he affects good health.
	Make "Mr. Good for Your Teeth" and "Mr. Bad for Your Teeth" on bulletin boards. Draw pictures of foods and arrange in shape of body.
2. Coarse foods such as raw vegetables and fruits, popcorn, and nuts.	
B. What is the relationship between sweets and tooth decay?	
II. What do we need to know about shapes, function, and structure of teeth?	Make enlarged drawings of all shapes of teeth. Label and explain function of each.
A. Why are teeth shaped differently?	Use mortar and pestle to show how molars work.
1. Incisors 2. Cuspids 3. Bicuspids 4. Molars	Obtain sterilized extracted teeth from dentist. Compare with animal teeth.
	Obtain X-rays for use in study of the structure. Show roots, etc.
B. What are the different parts of the teeth?	
1. Crown 2. Neck 3. Root 4. Enamel 5. Dentin 6. Pulp 7. Cementum 8. Periodontal membrane	

Outline of Content	Related Activities
	Make models of teeth from soap, clay, or plaster.
	Use scissors to show how incisors work.
	Make charts to show blood supply to teeth.
III. What care should be given to teeth?	Demonstrate proper brushing techniques using models of teeth.
A. What should I do?	Make wall charts for each child to check his dental health habits.
1. Brush after every meal. 2. Rinse after snacks. 3. Avoid biting hard objects. 4. Use toothpaste or dentifrice of one part salt to two parts baking soda dissolved in water.	Use litmus paper to test acid in saliva before and after eating sweets.
B. How can my dentist help?	Make saliva cultures to show bacteria growth. Use microscope to show.
1. Clean teeth regularly. 2. Find cavities. 3. Restore teeth. 4. Detect and treat diseases. 5. Detect and correct malocclusion. 6. Apply fluoride solutions.	Invite dentist to visit class.
	Make humorous cartoons to illustrate tooth decay.
	Illustrate how acids dissolve calcium from teeth. Place one tooth in 1% hydrochloric acid and another in plain water. Allow to stand for a week. Shows softening.
	Compare dental service cost against other family care cost. Make charts or graphs indicating percentage of family income spent for each.
IV. What should we know about correct occlusion?	Write articles for school paper regarding dental health experiments.
A. What is malocclusion?	Make paraffin models. Bite on paraffin slightly warmed. Fill paraffin with plaster of paris.
B. How does normal position of the teeth help me?	Use photographs or slides showing "before" and "after" in orthodontic cases.
1. Appearance 2. Digestion 3. Speech 4. Good emotional health	Put lump of sugar in water. Put crushed sugar in water. Find which dissolves first. Proves crushing aids food in becoming liquid faster.
V. What diseases might result from improper dental care?	Chew piece of bread until it begins to taste sweet. Shows mastication as first step of digestion.
A. Dental Caries	
1. Cavity Formation 2. Pain 3. Disfigured teeth 4. Infection (Abscess) 5. Loss of teeth	

Outline of Content **Related Activities**

B. Gingivitis

1. Poor oral hygiene
2. Poor occlusion (Malocclusion)
3. Vincent's Infection
4. Catarrhal Infections (Injuries)
5. Periodontitis.

EVALUATION

To evaluate or measure the success of any program it is necessary to set goals to be reached. In the dental health program it should be considered what level of understanding regarding oral health has been reached by all pupils.

1. Are the children conscious of the proper foods needed?
2. Is this evident in the foods they choose to eat?
3. Is there far less chewing gum and candy being used?
4. Are the children having regular dental checks by dentists?
5. Do the children know how to brush their teeth properly?
6. Are fingers kept out of mouths and are mouths closed for breathing?
7. Have the children developed an awareness of the effects of good teeth in personal appearance and all aspects of living?
8. Do the children now know the types of teeth and their functions?
9. Are the children brushing their teeth regularly or rinsing the mouth when impossible to brush?
10. Do children understand the part that teeth play in digestion?

Teaching Aids

Films: **Grades**

Save Those Teeth	1-9
Winky the Watchman	1-6
Teeth Are to Keep	4-6
It's Your Health	4-6
Taro's Adventure in Health	4-6
Dental Health—How and Why	1-12

(All available from Missouri Division of Health)

Film Strips

1. The Teeth (40 frames) Young America
2. Dental Health Series (41 frames) Young America
3. We Visit the Dentist—Young America
4. Your Teeth and Their Care—(63 frames)—Society for Visual Education
5. Your Teeth and Their Health—(56 frames)—Society for Visual Education

Materials Available from:

American Dental Association, 211 East Chicago Ave., Chicago, Ill. 60611
Missouri State Dental Association, 103 West High St., Jefferson City, Mo.
Division of Health, Jefferson City, Mo.

INSTRUCTIONAL PROGRAM

DENTAL HEALTH EDUCATION FOR THE JUNIOR HIGH LEVEL

The purpose of this unit is to develop the concept that dental health is vital to general health and influences the social and emotional development of the child. The extent to which this concept is developed will be reflected in the knowledge, attitudes, and practices of the pupil.

Specific Objectives

To realize that knowledge is basic to the development of good dental health habits.
To develop good dental health practices.
To acknowledge and appreciate the importance of dental health to social well being.
To be aware of career opportunities in dentistry.
To know what dental health services are available in the community.

Dental Characteristics

By the time the pupil has reached the junior high school, he normally will possess all of his permanent teeth, except wisdom teeth (third molar). Many of those children who require orthodontic care will be under treatment. It should be realized that orthodontics will present special problems in brushing the teeth. It may also present problems in social adjustment.

Due to incorrect methods of brushing, there may be slight bleeding of the gums. In some cases this may be due to pubertal changes.

Persistant bleeding is a symptom which should not be ignored. In such cases encourage the pupil to see his dentist.

Vocabulary

enamel
dentin
calcium
fluoridation
saliva
caries
abscess
periodontal
fermentation
vitality
lactic acid
pulp
dentifrices
periodontal disease
gingivitis
malocclusion
orthodontics
abrasive
crown
cementum

Outline of Content

I. What knowledge is basic to the development of good dental health habits?

A. How can we maintain a healthy mouth?

1. Proper brushing
2. Proper diet (stress the role of sugar)
3. Regular dental visits
4. Avoid injury (protect teeth in sports)
5. Fluoridation of water
6. Fluoride applied by dentist
7. Massage
8. Mastication

Related Activities

Give sample pre-test listed at end of unit.

Invite a dentist to discuss dental health.

Keep a 3-day record of food bought by your family.

Film—"Swab Your Choppers".

Demonstrate correct procedure in brushing.

Indicate in 5 test tubes the amount of sugar in —pie, cake, gum, candy bar, soda. (Use Sugar Chart).

Outline of Content	Related Activities
B. How do teeth grow and develop?	
1. Shape and structure of each tooth 2. Growth of the primary teeth 3. Growth of the permanent teeth	Film—"It's All In Knowing How."
C. What is desirable behavior at the dentist's office?	Consult **"Consumer's Report"** to determine the abrasiveness of different dentifrices. Make a study of fluoridation in local water. Make a good dentifrice from 1 part salt and 2 parts baking soda dissolved in water. Examine teeth with a hand mirror. Use sterilized extracted teeth or plastic models for detailed study. Filmstrips—"The Teeth" "Save Those Teeth" Film—"The Case Of The Missing Tooth." American Dental Association.
II. Does dental health affect your social well-being?	Make posters for school display.
A. How does it influence you personally?	Filmstrip—"Your Teeth and Your Health."
1. General Health a. Aggressiveness b. Malocclusion c. Gingivitis d. Halitosis	Collect photos of models and sports heroes to show the beauty of well-formed teeth and an attractive smile (front and profile).
2. Appearance a. Caries and diseases b. Broken and irregular teeth c. Discolored teeth	Filmstrip—"Teenage Teeth." Film—"Teeth—Their Structure and Care."
3. Correct speech	Film—"Judy's Smile."
B. How does dental health influence your group acceptance?	
1. Apparance—smile—gums (look for good examples) 2. Aggressiveness 3. Malocclusion	Study preventive costs as compared to remedial dental work. Compare cost of dental services with that of other expenses such as smoking or beauty care.
III. What is the occupational outlook for you in this field?	

Outline of Content	Related Activities
A. What are the opportunities available as a dentist?	Take a group visit to dentist's office.
1. Private practice 2. Public health a. Federal b. State c. Local	Ask school counselors to brief you on types of jobs in this field and look at **"Occupational Outlook Handbook."**
3. Armed Services career 4. Teacher in dental school 5. Industrial dentistry 6. Hospital Dentistry 7. Dental Research	Investigate the field of dentistry and its auxiliary fields as a career for the future by student reports.
B. What are the auxiliary fields?	
1. Dental assistant 2. Dental hygienist 3. Dental laboratory technician 4. Research assistant 5. Manufacture and sale of dental equipment	
IV. What dental health services are locally available?	Invite school nurse to describe school dental health program.
A. What services does your school provide?	Invite a community representative to discuss community services.
B. What services are available through the community?	Film—"Science Fights Tooth Decay."
1. Community dental clinic 2. Fluoridation project 3. Services provided by civic organizations 4. Local dental society	Film—"Dental Health—How and Why." Discuss how all civic organizations cooperate for the benefit of the community.

EVALUATION

Teacher's Check List

Do pupils know proper procedure for brushing the teeth?
Do pupils realize relationship of proper and regular toothbrushing to good gingival health?
Do pupils understand the importance of proper diet and thorough mastication?
Are pupils familiar with the symptoms of dental disease?
Do pupils realize that only the dentist can locate the small cavities through the aid of X-ray?
Do pupils realize that most of the dental irregularities can be corrected?
To what extent do pupils possess fear, ignorance, and mis-information about the dentist and dental practices?

"True-False" Test on Dental Health Knowledge

1. Dental abscesses are always very painful. (F)
2. Teeth can be kept absolutely clean on all surfaces by brushing them twice a day. (F)
3. A common cause of unpleasant breath is use of the wrong dentifrice. (F)
4. Infection from abscessed teeth may lead to disease in other parts of the body. (T)
5. In any group of boys and girls of junior high school age, about half of them have teeth that are somewhat irregular. (T)
6. Go to a dentist only when you have something wrong with your teeth. (F)
7. Toothache usually means that the tooth has a deep cavity. (T)
8. Loss of one or more teeth may change a person's appearance. (T)
9. Over 95 per cent of the American people will suffer from dental disease. (T)
10. Primary teeth do not need dental care. (F)
11. Food or candy particles allowed to remain in the mouth do not contribute to tooth decay. (F)
12. It is cheaper to obtain dental care every year than to wait for five years and then have a great deal of work done. (T)
13. If your gums bleed when you brush your teeth, it means you have pyorrhea. (F)
14. Foods beneficial to dental health are not essential to general health. (F)
15. Fluoridated water helps prevent dental decay. (T)
16. Swishing and swallowing with water right after eating helps prevent dental decay. (T)

Sample Pre-Test on Dental Health

1. Why is it necessary to have different kinds of teeth?
2. What is the nickname of the first permanent teeth to erupt?
   Of the last to erupt?
3. Which part of a tooth is formed first—the roots? or the crown?
4. What food materials are required for tooth building, and how do the tooth cells obtain them?
5. What is the direct cause of dental decay? What are some possible indirect causes?
6. What new decay preventive helps in reducing the occurrence of tooth decay?

INSTRUCTIONAL PROGRAM

DENTAL HEALTH EDUCATION FOR THE SENIOR HIGH LEVEL

The purpose of this unit is to provide every student with the knowledge necessary to practice good dental hygiene and develop a desire for adequate dental care which will remain with the student throughout life.

It is understandable that the material covered in this Guide will probably have been given to senior high school students several times previously. It will take some study and ingenuity to present it again and have it properly received.

It is suggested that the effects of dental caries and other oral diseases be stressed as to their resultant disfigurement and how this disfigurement will affect the individual's personal appearance, his health, his social well being and acceptance, his future business associations, and the economic aspect of oral neglect. The economic aspects as it will affect him individually and as a parent should be stressed.

Specific Objectives

To gain a knowledge of the development, structure and function of the teeth.
To develop an understanding of the prevention and control of dental diseases and abnormalities.
To gain an understanding of the relationship between diet and dental health.
To gain an understanding of the new developments in dentistry.
To stimulate interest in dentistry and related fields, and to develop a desire for dental care.

Dental Characteristics of Senior High School Students

The completed eruption of twenty-eight (28) permanent teeth in both the upper and lower jaws will result in a U-shape to each arch. From one to four additional teeth, third molars or wisdom teeth, may appear in the latter stages of this age level. The teeth appear in the mouth in a slanted position and oppose each other diagonally. The upper incisors overlap the lower incisors by approximately ¼ their length.

Vocabulary

incisors
cuspid
bicuspid
molar
primary teeth (deciduous)

erupt
pre-molar
crown
neck
root
dentin
enamel
cementum
pulp
periodontal membrane
pulp chamber
root canal
mastication
dental caries
anesthetics
barbiturate
radioactive isotopes

dental plaques
fissure
abscess
extraction
dentifrice
topical fluoride
fluoridation
periodontal
gingivitis
Vincent's infection
malocclusion
occlusion
space maintainer
orthodontic
dental prosthetic appliance
artificial crown
bridgework
partial denture
full denture
procaine
nitrous oxide
antibiotics

Outline of Content	Related Activities
I. How are teeth developed?	Use tooth models, charts, and full set models in presenting the first three (3) topics. (I, II, III)
A. What are the different kinds of teeth?	
1. Incisors 2. Cuspids 3. Bicuspids 4. Molars	
B. What are the primary teeth?	
1. Formation 2. Eruption 3. Number of each kind 4. Time of loss 5. Importance of primary teeth	
C. What are the permanent teeth?	
1. Formation 2. Eruption 3. Number 4. Sequence	
II. How is a tooth constructed?	Test individuals by using models, drawings, and charts.
A. What are the following?	
1. Crown 2. Neck 3. Root 4. Pulp chamber 5. Root canal	
B. Of what types of tissue is the tooth composed?	
1. Dentin 2. Enamel 3. Cementum 4. Pulp a. Nerves b. Arteries c. Veins d. Lymphatics 5. Periodontal membrane	
III. What constitutes prevention and control of diseases and abnormalities of the oral cavity?	
A. What is the scope of the dental health problem?	

Outline of Content	Related Activities
1. 50% of all 2-year olds have decayed teeth. 2. At age 16 the average has seven (7) decayed, missing or filled teeth. 3. Less than 4% of high school students are free from dental caries.	
B. How can dental caries be prevented and controlled?	
1. Acid-forming bacteria acting on carbohydrates. a. Acid can dissolve tooth enamel b. Saliva neutralizes a certain amount of acid.	
2. Factors that influence the extent of the damage by the acid. a. The presence of dental plaques b. The strength of the acid and the ability of the saliva to neutralize it. c. The length of time the acid is in contact with the teeth. d. The susceptibility of the teeth to decay.	
3. Progressive steps in tooth decay. a. Small hole, fissure, or flaw of the enamel. b. Penetration into the dentin if left unchecked. c. Progress through dentin is more rapid than through enamel. d. Moves to pulp chamber where lymph and blood vessels, and nerves become infected. e. Abscess may form Within tooth or at root tip Pain, soreness, and swelling May be the cause of several physiological disturbances. f. Extraction may be necessary.	Use a full set model to show proper brushing techniques. Have students brush their teeth in usual or suggested manner. Then take cotton swab and apply the following disclosing solution to the teeth.* Zinc Iodide 12 grams Water 8 cc Iodine 20 grams Glycerine 40 cc *This solution may be made up in chemistry laboratory or by druggist.
C. What are the measures for prevention and control of dental caries?	Have students observe the stained areas between teeth and at gum lines. This will illustrate the ineffectiveness of the usual brushing habits, and will demonstrate where cavities may be expected to occur unless thorough brushing is carried out.
1. Reduction in the daily consumption of sweets. a. Average person in United States consumes 12 times amount of sugar as average person in 1830.	

Outline of Content	Related Activities
b. Need to reduce frequency of sugar consumption.	
2. Proper toothbrushing at the proper times.	Organize student panel discussion on values of dentifrices and mouth washes.
a. Correct brushing will not prevent, but will reduce dental caries.	
b. Brush immediately after eating.	
c. Proper brushing removes food particles and helps maintain healthy gums.	
d. Dentifrice is merely an aid to cleaning of teeth.	
e. Research shows little medicinal value of mouthwashes.	
f. Toothbrush should have a small head, flat surface, and firm bristles.	
g. Two brushes are desirable.	
3. Topical fluoride applications	
a. Will not halt decay already started, but will prevent new decay.	
b. Reduces decay by 40%.	
4. Fluoridation	Discuss fluoridation problem.
a. One part fluorine to one million parts of water.	
b. Dental decay is 65% less in areas where fluorides have been added to the water supply.	
c. Fluoridation primarily effective to children.	
d. Does not affect taste, color, or odor of water.	
e. Cost about 10c per person per year.	
f. Many scientific bodies have approved fluoridation.	
5. Regular dental care	
a. First dental visit at 2½ to 3 years of age, then every six (6) months.	
b. Advantages of regular visits. Defects and diseases detected in early stages. Observance of irregularities Prevention of pain Cost of care reduced	Secure X-ray pictures from a dentist.
c. X-ray is one of dentist's greatest aids.	

Outline of Content	Related Activities
Detection of diseases and infections. Detection of abnormalities.	
D. What are the prevalent types of periodontal diseases?	
1. Define the term "periodontal disease"	
2. Types of periodontal diseases	
a. Gingivitis	
Symptoms	
Cause	
Cure	
Prevention	
b. Periodontitis	
Symptoms	Film—"Teeth and Their Care"—University of Missouri. $1.00 rental
Cause	
Cure	
Prevention	Film—"The Case of the Missing Tooth"—American Dental Association
c. Vincent's infection	
Symptoms	
Cause	
Cure	
Prevention	Film—"Teeth—Their Structure and Care"—Missouri Division of Health
E. What is malocclusion?	
1. Effects of malocclusion upon an individual	
a. Chewing	
b. Speech	
c. Periodontal disease	
d. Facial deformities	
e. Social and emotional disturbances.	
2. Prevalence of malocclusion	
a. 30% of children need orthodontic supervision	
b. Develops most commonly when losing primary teeth prematurely.	
3. The causes of malocclusion	
a. Inherited tendencies	
Tooth growth more advanced than jaw growth	
Narrow dental arches	
Primary teeth shed too early	Interview dentist about tooth replacement.
Primary teeth retained too long	
b. Acquired irregularities	
Continued pressure on teeth or facial bones	
Thumb sucking and lip sucking	
Poor dental care after an early loss of a tooth	
4. Correction and prevention of malocclusion	

Outline of Content	Related Activities
a. Regular dental visits b. Referrals to an orthodontist c. Proper dental care.	
F. How does the physical character of foods affect the teeth?	Discuss the consumption of sweets.
1. We eat many overcooked soft foods. a. Food is impacted between teeth b. Clings to surface	
2. Fibrous foods such as apples, oranges, carrots, and celery clean teeth and stimulate gums.	Secure—"Diet and Dental Health" booklet—American Dental Association.
G. How can an inadequate diet contribute to periodontal diseases?	Write essay on relationship of nutrition to dental health.
V. What are some of the recent developments in the field of dentistry?	
A. What are anesthetics?	
1. Local anesthetics (local area) a. Non-toxic b. Rapid and long lasting c. Procaine d. Others when patient is procaine-sensitive	
2. General Anesthetics (complete unconsciousness) a. Gas consisting of nitrous oxide (laughing gas) and oxygen b. Intravenous injection of barbiturate	
B. How are antibiotics used in dentistry?	
C. What are the advantages of the new drills?	
1. Operate at high speeds (eliminate the sensation of vibration) 2. Faster and very little pain, if any (to patient 3. Operates at reduced friction	
D. How have radioactive isotopes aided dentistry?	
1. Used in research 2. Radioactive calcium used to study tooth formation	

EVALUATION

1. Does the student have a thorough knowledge of the development, structure, and function of the teeth?
2. Has the student gained an adequate insight concerning the factors contributing to dental caries, periodontal diseases and abnormalities?
3. Does the student realize the importance of proper dental care toward the reduction of dental caries?
4. Has the student gained a thorough understanding concerning the replacement of lost teeth?
5. Does the student realize the importance of an adequate diet as related to good dental health?
6. Has the student developed a knowledge of the many phases in the field of dentistry?
7. Has the student, as a future parent, learned enough to guide him into good parental habits and practices.

Write a composition regarding the responsibility of the parents toward dental health education.

REPORT OF DENTAL EXAMINATION

This is to certify that I have examined the teeth of

..... and:

☐ 1. All necessary dental work has been completed.

☐ 2. Treatment is in progress.

☐ 3. No dental work is necessary.

Further recommendations .....

.....

.....

DATE SIGNATURE OF DENTIST

PLEASE RETURN THIS CARD TO THE TEACHER

DIVISION OF HEALTH OF MISSOURI
DENTAL OFFICE EXAMINATION FORM

TO THE PARENT: Our school has a health program that is designed to improve, protect and promote the health of the child. As a part of this health program we strongly urge all parents to have their children visit their dentist at least once a year for a dental examination and whatever treatment may be necessary. In the interest of better dental health would you then have your child take this card to a dentist of your choice. When the examination and treatment are completed, the card should be returned to school.

.....

PRINCIPAL

Form DD 8 Rev. 7-56

DIVISION OF HEALTH OF MISSOURI

SCHOOL DENTAL EXAMINATION

PARENT: Our school has a health program that is designed to improve, protect, and promote the total health of your child. As part of this program, we strongly urge your child to have a dental inspection and necessary treatment. A dental inspection team will do the examination and inform you of the need for care.

..... Principal

..... Parent

TO BE FILLED IN BY INSPECTING PERSONNEL

REPORT OF DENTAL INSPECTION DONE IN SCHOOL

Parent or guardian .....

A dental inspection of your child ..... has been made. This inspection shows:

☐ 1. Need for dental attention. It is recommended that your family dentist be consulted as soon as possible.

☐ 2. No readily apparent dental defects. However, it is recommended that your child visit your family dentist for a more complete examination.

DATE ..... **SIGNED** .....

EXCUSE FORM FOR DENTAL APPOINTMENT

NAME OF PUPIL .....

HAS AN APPOINTMENT FOR NECESSARY DENTAL SERVICE ON

DATE OF APPOINTMENT ..... 19.....

HOUR OF APPOINTMENT .....A.M..... P.M.....

This service cannot be rendered satisfactorily outside of school hours.

.....D.D.S.

This appointment was made with my knowledge and approval.

.....

SIGNATURE OF PARENT

GOOD DENTAL HEALTH GOES HAND IN HAND WITH GOOD GENERAL HEALTH

Proper diet, thorough tooth-brushing and regular and frequent examinations by a dentist will lead to better dental health for children.

This form was proposed by the MISSOURI STATE DENTAL ASSOCIATION for cooperative use of the parent, the school and the dentist.

INSTRUCTIONAL PROGRAM

DENTAL SURVEY RECORD

NAME _____ SCHOOL _____
LAST FIRST MIDDLE

ADDRESS _____ AGE _____

BIRTH DATE GRADE SEX

UPPER RIGHT			E	D	C	B	A	A	B	C	D	E		UPPER LEFT			
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8		
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8		
LOWER RIGHT			E	D	C	B	A	A	B	C	D	E		LOWER LEFT			

Grade Date Prophy. Needed Orthodontics Needed Under Treatment

Comment

DMF

UPPER RIGHT			E	D	C	B	A	A	B	C	D	E		UPPER LEFT			
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8		
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8		
LOWER RIGHT			E	D	C	B	A	A	B	C	D	E		LOWER LEFT			

Grade Date Prophy. Needed Orthodontics Needed Under Treatment

Comment

DMF

UPPER RIGHT			E	D	C	B	A	A	B	C	D	E		UPPER LEFT			
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8		
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8		
LOWER RIGHT			E	D	C	B	A	A	B	C	D	E		LOWER LEFT			

Grade Date Prophy. Needed Orthodontics Needed Under Treatment

Comment

DMF

UPPER RIGHT			E	D	C	B	A	A	B	C	D	E		UPPER LEFT			
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8		
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8		
LOWER RIGHT			E	D	C	B	A	A	B	C	D	E		LOWER LEFT			

Grade Date Prophy. Needed Orthodontics Needed Under Treatment

Comment

DMF

MISSOURI DIVISION OF HEALTH

REPORT OF SCHOOL DENTAL INSPECTION

Age ____ Date _____

def ____ DMF ____

def – DMF _____

School _____ City _____ County _____

	Number of Pupils	DECIDUOUS TEETH				PERMANENT TEETH					CORRECTION		No Incidence (Caries free)	No Care Needed
		d	e	f	def	D	M	F	DMF	6's	Past Year	Completed		
TOTALS														
AVERAGE										%	%	%	%	%

DD 15

Prophylaxis Needed: Number ____ %

Malocclusion: Number ____ %

Gingivitis: Number ____ %

Treatment Required: Yes ____ No ____